

SEQUENCE LISTING

<110> HIRANO, Toshio

<120> EMT INDUCER

<130> C1-A0325P

<150> JP 2003-435122

<151> 2003-12-26

<160> 43

<170> PatentIn version 3.3

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<211> 742

<212> PRT

<213> Danio rerio

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Pro Val Ala Asn Met Ile Gly Trp Trp Pro Arg Leu Cys Pro Val Met

35

40

45

Ser Leu Ala Leu Leu Trp Ala Cys Ser Val Gly Ala Gly Ser Asp Cys

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55

60

Lys Ser Val Ala Ile Glu Thr Asp Ser Arg Ile Ala Glu Gln Thr Gln
65 70 75 80

Gln Arg His Leu Gln Ala Leu Phe Asp Lys Tyr Gly Gln Asn Gly Ser
85 90 95

Ile Ser Leu Glu Gly Leu Phe Asn Leu Leu Lys Gly Val Gly Leu Asp
100 105 110

Arg Ile Arg Lys Val Met Val His His Pro Gly Asn Ala His Asn His
115 120 125

Thr His Thr His Asp His Thr His Thr His Val Asp Lys Leu Thr Ala
130 135 140

His Thr His Pro Val Thr Thr Lys Lys Gly Asp Met Asp His Ser Val
145 150 155 160

Glu Lys Ser Asp Pro Val Pro Lys Ala Gln Pro Asp Pro Ala Ser Gly
165 170 175

Lys Lys Ser Gln Ser Asp Ala His His Asn Leu Tyr Met Lys Met Asn
180 185 190

Gln Glu Ser Thr Thr Ala Leu Thr Thr Pro Ser Tyr Val Thr Arg Ser
195 200 205

Arg Arg Thr Asn Arg Ser Ala Asp Tyr Asp Phe Thr Gln Asp His Ala
 210 215 220

Ser Phe Ser Pro Ser Gln Pro Asn Val Thr His Ser Asn His Thr His
 225 230 235 240

His Asp Glu Asp Thr Pro Thr His Gln His Asp Asp His Asp Glu His
 245 250 255

Glu His Ala Arg Ala Ser Leu Gly Cys Gln Asn Ala Ser Thr Ile Leu
 260 265 270

Gln Thr His Gly Met Arg Lys Glu Ala Ser Leu Ser Val Lys Asp Phe
 275 280 285

Ser Phe Leu Cys Pro Ala Leu Leu Met Gln Ile Asp Ser Lys Ser Cys
 290 295 300

Ile Val His Glu Asp Glu Asp Glu His Ser Asp His Ser His His His
 305 310 315 320

Lys His His His His His His Asp His Gln His Leu Gln His Pro His
 325 330 335

Asn His Thr Asn Gly Arg Gly Gln Arg Asn Thr Pro Val Tyr Ile Ala
 340 345 350

Trp Leu Gly Gly Phe Leu Ser Ile Thr Leu Ile Ser Leu Leu Ala Leu
 355 360 365

Val Gly Val Val Leu Ile Pro Leu Met Asn Arg Val Cys Phe Asn Phe
 370 375 380

Leu Leu Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu Ser Gly Asp
 385 390 395 400

Ala Leu Leu His Leu Ile Pro His Ser Gln Gly His His His His Gly
 405 410 415

His Ser Glu Glu His Ala Glu Glu Glu Asp Ser Leu Arg Pro Val Trp
 420 425 430

Thr Gly Leu Thr Ala Leu Ser Gly Val Tyr Ile Met Phe Leu Ile Glu
 435 440 445

His Phe Leu Thr Leu Gly Lys Met Tyr Lys Asp Lys Asn Gln Lys Val
 450 455 460

Gln Lys Arg Val Asp Leu Thr Thr Glu Val Leu Glu Ser Glu Lys Leu
 465 470 475 480

Pro Ser Leu Glu Glu Asn Asp Val Lys Ile Glu Ala Ala Glu Thr Asn
 485 490 495

Gly Gly Arg Ala Leu Ala Glu Glu Glu Glu Val Met Leu Gly Ala Glu
500 505 510

Leu Tyr Asn Asp Ile Asp Cys Glu Asn Lys Cys His Ser His Phe His
515 520 525

Asp Thr Val Gly Gln Ser Asp Glu Gln His His His His His Asp Tyr
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His His Ile Leu His His His His Ser Gln Asn His His Pro His Thr
545 550 555 560

His Thr His Arg His Thr His Ser Tyr Ser Gln Gln His Phe Glu Gln
565 570 575

Ala Gly Val Ala Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu
580 585 590

His Asn Phe Ser Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly
595 600 605

Leu Ser Ser Gly Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu
610 615 620

Pro His Glu Leu Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Ser
625 630 635 640

Val Arg Gln Ala Met Leu Tyr Asn Leu Leu Ser Ala Leu Met Gly Tyr
645 650 655

Leu Gly Met Ile Ile Gly Ile Leu Ile Gly His Tyr Ala Glu Asn Val
660 665 670

Ala Thr Trp Ile Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala
675 680 685

Leu Val Asp Met Val Pro Glu Met Leu His Asn Asp Ala Ser Glu Ala
690 695 700

Gly Phe Ser His Tyr Gly Phe Phe Leu Leu Gln Asn Ala Gly Ile Leu
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Gln Leu Asp Leu Gly Tyr
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<212> PRT

<213> Homo sapiens

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 35 40 45

Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr
 50 55 60

Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln
 65 70 75 80

Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His
 85 90 95

Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser
 100 105 110

Asp His Glu His His Ser Asp His Glu His His Ser Asp His Asn His
 115 120 125

Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu Cys Pro Asp His Asp
 130 135 140

Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser Gln Gly Lys Gly Ala
 145 150 155 160

His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val Lys Asp Ser Val
 165 170 175

Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn Thr Val Ser Glu Gly
 180 185 190

Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg Pro Gly Lys Leu Phe
 195 200 205

Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser Val Thr Ser Lys Ser
 210 215 220

Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn Glu Ser Val Ser Glu
 225 230 235 240

Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr Asn Glu Asn Pro Gln
 245 250 255

Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser His Gly Met Gly Ile
 260 265 270

Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr Leu Cys Pro Ala Ile
 275 280 285

Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile His Thr Ser Glu Lys
 290 295 300

Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu Gln Ile Ala Trp Val
 305 310 315 320

Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe Leu Ser Leu Leu Gly
 325 330 335

Val Ile Leu Val Pro Leu Met Asn Arg Val Phe Phe Lys Phe Leu Leu
 340 345 350

Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu Ser Gly Asp Ala Phe
 355 360 365

Leu His Leu Leu Pro His Ser His Ala Ser His His His Ser His Ser
 370 375 380

His Glu Glu Pro Ala Met Glu Met Lys Arg Gly Pro Leu Phe Ser His
 385 390 395 400

Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala Tyr Phe Asp Ser Thr Trp
 405 410 415

Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr Phe Met Phe Leu Val Glu
 420 425 430

His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp Lys Lys Lys Lys Asn
435 440 445

Gln Lys Lys Pro Glu Asn Asp Asp Asp Val Glu Ile Lys Lys Gln Leu
450 455 460

Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn Glu Glu Lys Val Asp Thr
465 470 475 480

Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp Ser Gln Glu Pro Ser
485 490 495

His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu Glu Glu Glu Val Met
500 505 510

Ile Ala His Ala His Pro Gln Glu Val Tyr Asn Glu Tyr Val Pro Arg
515 520 525

Gly Cys Lys Asn Lys Cys His Ser His Phe His Asp Thr Leu Gly Gln
530 535 540

Ser Asp Asp Leu Ile His His His His Asp Tyr His His Ile Leu His
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His His His His Gln Asn His His Pro His Ser His Ser Gln Arg Tyr
565 570 575

Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala Thr Leu Ala Trp Met
580 585 590

Val Ile Met Gly Asp Gly Leu His Asn Phe Ser Asp Gly Leu Ala Ile
595 600 605

Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly Leu Ser Thr Ser Val
610 615 620

Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val
625 630 635 640

Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Val Leu Tyr Asn Ala
645 650 655

Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala Thr Gly Ile Phe Ile
660 665 670

Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe Ala Leu Thr Ala
675 680 685

Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met Val Pro Glu Met Leu
690 695 700

His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp Gly Tyr Phe Phe
705 710 715 720

Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile Met Leu Leu Ile
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<212> DNA

<213> Danio rerio

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tgacatgttc tgtatgttcc agggaaaaat gtctttaatg ctttttcaag aactaacaca 2700

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<400> 7

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<212> DNA

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<212> DNA

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<210> 15

<211> 58

<212> PRT

<213> Danio rerio

<400> 15

Ala Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe Ser Asp Gly

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5

10

15

Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly Leu Ser

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25

30

Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp
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Phe Ala Val Leu Leu Lys Ala Gly Met Ser
 50 55

<210> 16

<211> 58

<212> PRT

<213> Homo sapiens

<400> 16

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 20 25 30

Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp
 35 40 45

Phe Ala Val Leu Leu Lys Ala Gly Met Thr
 50 55

<210> 17

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<213> Homo sapiens

<400> 17

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			20						25					30	

Thr	Ser	Ile	Ala	Val	Phe	Cys	His	Glu	Leu	Pro	His	Glu	Leu	Gly	Asp
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Phe	Ala	Val	Leu	Leu	Lys	Ala	Gly	Met	Thr
			50					55	

<210> 18

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<212> PRT

<213> Homo sapiens

<400> 18

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			20						25					30	

Thr	Thr	Leu	Ala	Val	Phe	Cys	His	Glu	Leu	Pro	His	Glu	Leu	Gly	Asp
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Phe Ala Met Leu Leu Gln Ser Gly Leu Ser

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<210> 19

<211> 58

<212> PRT

<213> Homo sapiens

<400> 19

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Leu Ala Val Gly Ala Ala Phe Ala Ser Ser Trp Lys Thr Gly Leu Ala

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Thr Ser Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp

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Phe Ala Ala Leu Leu His Ala Gly Leu Ser

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<210> 20

<211> 58

<212> PRT

<213> Homo sapiens

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 35 40 45

Phe Ala Val Leu Leu Ser Ser Gly Leu Ser
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 20 25 30

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Phe Val Ile Leu Leu Asn Ala Gly Met Ser

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<210> 22

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<212> PRT

<213> Homo sapiens

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Ala Trp Met Ile Thr Leu Ser Asp Gly Leu His Asn Phe Ile Asp Gly

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Leu Ala Ile Gly Ala Ser Phe Thr Val Ser Val Phe Gln Gly Ile Ser

20

25

30

Thr Ser Val Ala Ile Leu Cys Glu Glu Phe Pro His Glu Leu Gly Asp

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Phe Val Ile Leu Leu Asn Ala Gly Met Ser

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<210> 23

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<212> PRT

<213> Homo sapiens

<400> 23

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Phe Ala Ile Leu Val Gln Ser Gly Cys Ser
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<210> 24

<211> 58

<212> PRT

<213> Homo sapiens

<400> 24

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Leu Ala Ile Gly Ala Ser Phe Arg Gly Gly Arg Gly Leu Gly Ile Leu
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Thr Thr Met Thr Val Leu Leu His Glu Val Pro His Glu Val Gly Asp
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Phe Ala Ile Leu Leu Arg Ala Gly Phe Asp
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<210> 25
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<220>
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 Ala Arg Gly Leu Gly Ala Pro His Trp Val Ala Val Gly Leu Leu Thr.
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tgg gcg acc ttg ggg ctt ctg gtg gct gga ctc ggg ggt cat gac gac 154
 Trp Ala Thr Leu Gly Leu Leu Val Ala Gly Leu Gly Gly His Asp Asp
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ctg cac gac gat ctg caa gag gac ttc cat ggc cac agc cac agg cac 202
 Leu His Asp Asp Leu Gln Glu Asp Phe His Gly His Ser His Arg His
 35 40 45

tca cat gaa gat ttc cac cat ggc cac agc cat gcc cat ggc cat ggc 250
 Ser His Glu Asp Phe His His Gly His Ser His Ala His Gly His Gly
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cac act cac gag agc atc tgg cat gga cat acc cac gat cac gac cat 298
 His Thr His Glu Ser Ile Trp His Gly His Thr His Asp His Asp His
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gga cat tca cat gag gat tta cac cat ggc cat agc cat ggc tac tcc	346
Gly His Ser His Glu Asp Leu His His Gly His Ser His Gly Tyr Ser	
85 90 95	
cat gag agc ctc tac cac aga gga cat gga cat gac cat gag cat agc	394
His Glu Ser Leu Tyr His Arg Gly His Gly His Asp His Glu His Ser	
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cat gga ggc tat ggg gag tct ggg gct cca ggc atc aag cag gac ctg	442
His Gly Gly Tyr Gly Glu Ser Gly Ala Pro Gly Ile Lys Gln Asp Leu	
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gat gct gtc act ctc tgg gct tat gca ctg ggg gcc aca gtg ctg atc	490
Asp Ala Val Thr Leu Trp Ala Tyr Ala Leu Gly Ala Thr Val Leu Ile	
130 135 140 145	
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Ser Ala Ala Pro Phe Phe Val Leu Phe Leu Ile Pro Val Glu Ser Asn	
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Ser Pro Arg His Arg Ser Leu Leu Gln Ile Leu Leu Ser Phe Ala Ser	
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Gly Gly Leu Leu Gly Asp Ala Phe Leu His Leu Ile Pro His Ala Leu	
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gaa cct cat tct cac cac act ctg gag caa ccc gga cat gga cac tcc	682
Glu Pro His Ser His His Thr Leu Glu Gln Pro Gly His Gly His Ser	
195 200 205	
cac agt ggc cag ggc ccc att ctg tct gtg gga ctg tgg gtt ctc agt	730
His Ser Gly Gln Gly Pro Ile Leu Ser Val Gly Leu Trp Val Leu Ser	
210 215 220 225	

gga att gtt gcc ttt ctt gtc gtg gag aaa ttt gtg aga cat gtg aaa	778
Gly Ile Val Ala Phe Leu Val Val Glu Lys Phe Val Arg His Val Lys	
230 235 240	
gga gga cat ggt cac agt cat gga cat gga cac gct cac agt cat aca	826
Gly Gly His Gly His Ser His Gly His Gly His Ala His Ser His Thr	
245 250 255	
cgt gga agt cat gga cat gga aga caa gag cgt tct acc aag gag aag	874
Arg Gly Ser His Gly His Gly Arg Gln Glu Arg Ser Thr Lys Glu Lys	
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Gln Ser Ser Glu Glu Glu Glu Lys Glu Thr Arg Gly Val Gln Lys Arg	
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cga gga ggg agc aca gta ccc aaa gat ggg cca gtg aga cct cag aac	970
Arg Gly Gly Ser Thr Val Pro Lys Asp Gly Pro Val Arg Pro Gln Asn	
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gct gaa gaa gaa aaa aga ggc tta gac ctg cgt gtg tcg ggg tac ctg	1018
Ala Glu Glu Glu Lys Arg Gly Leu Asp Leu Arg Val Ser Gly Tyr Leu	
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Asn Leu Ala Ala Asp Leu Ala His Asn Phe Thr Asp Gly Leu Ala Ile	
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Leu Thr Ala Val Gly Ala Leu Ala Gly Thr Ala Cys Ala Leu Leu Thr	
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Glu Gly Gly Ala Val Gly Ser Glu Ile Ala Gly Gly Ala Gly Pro Gly	
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Trp Val Leu Pro Phe Thr Ala Gly Gly Phe Ile Tyr Val Ala Thr Val	
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Ser Val Leu Pro Glu Leu Leu Arg Glu Ala Ser Pro Leu Gln Ser Leu	
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Ala His Leu Glu	
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 35 40 45

His Ser His Glu Asp Phe His His Gly His Ser His Ala His Gly His
 50 55 60

Gly His Thr His Glu Ser Ile Trp His Gly His Thr His Asp His Asp
65 70 75 80

His Gly His Ser His Glu Asp Leu His His Gly His Ser His Gly Tyr
85 90 95

Ser His Glu Ser Leu Tyr His Arg Gly His Gly His Asp His Glu His
100 105 110

Ser His Gly Gly Tyr Gly Glu Ser Gly Ala Pro Gly Ile Lys Gln Asp
115 120 125

Leu Asp Ala Val Thr Leu Trp Ala Tyr Ala Leu Gly Ala Thr Val Leu
130 135 140

Ile Ser Ala Ala Pro Phe Phe Val Leu Phe Leu Ile Pro Val Glu Ser
145 150 155 160

Asn Ser Pro Arg His Arg Ser Leu Leu Gln Ile Leu Leu Ser Phe Ala
165 170 175

Ser Gly Gly Leu Leu Gly Asp Ala Phe Leu His Leu Ile Pro His Ala
180 185 190

Leu Glu Pro His Ser His His Thr Leu Glu Gln Pro Gly His Gly His
195 200 205

Ser His Ser Gly Gln Gly Pro Ile Leu Ser Val Gly Leu Trp Val Leu
 210 215 220

Ser Gly Ile Val Ala Phe Leu Val Val Glu Lys Phe Val Arg His Val
 225 230 235 240

Lys Gly Gly His Gly His Ser His Gly His Gly His Ala His Ser His
 245 250 255

Thr Arg Gly Ser His Gly His Gly Arg Gln Glu Arg Ser Thr Lys Glu
 260 265 270

Lys Gln Ser Ser Glu Glu Glu Glu Lys Glu Thr Arg Gly Val Gln Lys
 275 280 285

Arg Arg Gly Gly Ser Thr Val Pro Lys Asp Gly Pro Val Arg Pro Gln
 290 295 300

Asn Ala Glu Glu Glu Lys Arg Gly Leu Asp Leu Arg Val Ser Gly Tyr
 305 310 315 320

Leu Asn Leu Ala Ala Asp Leu Ala His Asn Phe Thr Asp Gly Leu Ala
 325 330 335

Ile Gly Ala Ser Phe Arg Gly Gly Arg Gly Leu Gly Ile Leu Thr Thr
 340 345 350

Met Thr Val Leu Leu His Glu Val Pro His Glu Val Gly Asp Phe Ala
 355 360 365

Ile Leu Val Gln Ser Gly Cys Ser Lys Lys Gln Ala Met Arg Leu Gln
 370 375 380

Leu Leu Thr Ala Val Gly Ala Leu Ala Gly Thr Ala Cys Ala Leu Leu
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Gly Trp Val Leu Pro Phe Thr Ala Gly Gly Phe Ile Tyr Val Ala Thr
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Val Ser Val Leu Pro Glu Leu Leu Arg Glu Ala Ser Pro Leu Gln Ser
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Met Lys Val His Met His Thr Lys Phe Cys Leu

1 5 10

att tgt ttg ctg aca ttt att ttt cat cat tgc aac cat tgc cat gaa 159

Ile Cys Leu Leu Thr Phe Ile Phe His His Cys Asn His Cys His Glu

15 20 25

gaa cat gac cat ggc cct gaa gcg ctt cac aga cag cat cgt gga atg 207

Glu His Asp His Gly Pro Glu Ala Leu His Arg Gln His Arg Gly Met

30 35 40

aca gaa ttg gag cca agc aaa ttt tca aag caa gct gct gaa aat gaa 255

Thr Glu Leu Glu Pro Ser Lys Phe Ser Lys Gln Ala Ala Glu Asn Glu

45 50 55

aaa aaa tac tat att gaa aaa ctt ttt gag cgt tat ggt gaa aat gga 303

Lys Lys Tyr Tyr Ile Glu Lys Leu Phe Glu Arg Tyr Gly Glu Asn Gly

60 65 70 75

aga tta tcc ttt ttt ggt ttg gag aaa ctt tta aca aac ttg ggc ctt 351

Arg Leu Ser Phe Phe Gly Leu Glu Lys Leu Leu Thr Asn Leu Gly Leu

80 85 90

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Gly Glu Arg Lys Val Val Glu Ile Asn His Glu Asp Leu Gly His Asp	
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His Val Ser His Leu Asp Ile Leu Ala Val Gln Glu Gly Lys His Phe	
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His Ser His Asn His Gln His Ser His Asn His Leu Asn Ser Glu Asn	
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caa act gtg acc agt gta tcc aca aaa aga aac cat aaa tgt gat cca	543
Gln Thr Val Thr Ser Val Ser Thr Lys Arg Asn His Lys Cys Asp Pro	
140 145 150 155	
gag aaa gag aca gtt gaa gtg tct gta aaa tct gat gat aaa cat atg	591
Glu Lys Glu Thr Val Glu Val Ser Val Lys Ser Asp Asp Lys His Met	
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His Asp His Asn His Arg Leu Arg His His His Arg Leu His His His	
175 180 185	
ctt gat cat aac aac act cac cat ttt cat aat gat tcc att act ccc	687
Leu Asp His Asn Asn Thr His His Phe His Asn Asp Ser Ile Thr Pro	
190 195 200	
agt gag cgt ggg gag cct agc aat gaa cct tca aca gag acc aat aaa	735
Ser Glu Arg Gly Glu Pro Ser Asn Glu Pro Ser Thr Glu Thr Asn Lys	
205 210 215	
acc cag gaa caa tct gat gtt aaa cta ccg aaa gga aag agg aag aaa	783
Thr Gln Glu Gln Ser Asp Val Lys Leu Pro Lys Gly Lys Arg Lys Lys	
220 225 230 235	
aaa ggg agg aaa agt aat gaa aat tct gag gtt att aca cca ggt ttt	831

Lys Gly Arg Lys Ser Asn Glu Asn Ser Glu Val Ile Thr Pro Gly Phe	
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ccc cct aac cat gat cag ggt gaa cag tat gag cat aat cgg gtc cac	879
Pro Pro Asn His Asp Gln Gly Glu Gln Tyr Glu His Asn Arg Val His	
255 260 265	
aaa cct gat cgt gta cat aac cca ggt cat tct cat gta cat ctt cca	927
Lys Pro Asp Arg Val His Asn Pro Gly His Ser His Val His Leu Pro	
270 275 280	
gaa cgt aat ggt cat gat cct ggt cgt gga cac caa gat ctt gat cct	975
Glu Arg Asn Gly His Asp Pro Gly Arg Gly His Gln Asp Leu Asp Pro	
285 290 295	
gat aat gaa ggt gaa ctt cga cat act aga aag aga gaa gca cca cat	1023
Asp Asn Glu Gly Glu Leu Arg His Thr Arg Lys Arg Glu Ala Pro His	
300 305 310 315	
gtt aaa aat aat gca ata att tct ttg aga aaa gat cta aat gaa gat	1071
Val Lys Asn Asn Ala Ile Ile Ser Leu Arg Lys Asp Leu Asn Glu Asp	
320 325 330	
gac cat cat cat gaa tgt ttg aac gtc act cag tta tta aaa tac tat	1119
Asp His His His Glu Cys Leu Asn Val Thr Gln Leu Leu Lys Tyr Tyr	
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Gly His Gly Ala Asn Ser Pro Ile Ser Thr Asp Leu Phe Thr Tyr Leu	
350 355 360	
tgc cct gca ttg tta tat caa atc gac agc aga ctt tgt att gag cat	1215
Cys Pro Ala Leu Leu Tyr Gln Ile Asp Ser Arg Leu Cys Ile Glu His	
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Pro	Glu	Asp	Glu	Ala	Asn	Ile	Gly	Ala	Ser	Ala	Trp	Ile	Cys	Gly	Ile		
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Ile	Ser	Ile	Thr	Val	Ile	Ser	Leu	Leu	Ser	Leu	Leu	Gly	Val	Ile	Leu		
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Val	Ala	Leu	Ala	Val	Gly	Thr	Met	Ser	Gly	Asp	Ala	Leu	Leu	His	Leu		
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ctg	ccc	cat	tct	cag	ggg	gga	cat	gat	cac	agt	cac	caa	cat	gca	cat	1503	
Leu	Pro	His	Ser	Gln	Gly	Gly	His	Asp	His	Ser	His	Gln	His	Ala	His		
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Gly	His	Gly	His	Ser	His	Gly	His	Glu	Ser	Asn	Lys	Phe	Leu	Glu	Glu		
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tat	gat	gct	gta	ttg	aaa	gga	ctt	gtt	gct	cta	gga	ggc	att	tac	ttg	1599	
Tyr	Asp	Ala	Val	Leu	Lys	Gly	Leu	Val	Ala	Leu	Gly	Gly	Ile	Tyr	Leu		
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Ser Asp Trp Leu Gln Leu Lys Pro Leu Ala Gly Thr Asp Asp Ser Val	
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Val Ser Glu Asp Arg Leu Asn Glu Thr Glu Leu Thr Asp Leu Glu Gly	
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Gln Gln Glu Ser Pro Pro Lys Asn Tyr Leu Cys Ile Glu Glu Glu Lys	
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Ile Ile Asp His Ser His Ser Asp Gly Leu His Thr Ile His Glu His	
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Asp Leu His Ala Ala Ala His Asn His His Gly Glu Asn Lys Thr Val	
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Leu Arg Lys His Asn His Gln Trp His His Lys His Ser His His Ser	
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His Gly Pro Cys His Ser Gly Ser Asp Leu Lys Glu Thr Gly Ile Ala	
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Asn Ile Ala Trp Met Val Ile Met Gly Asp Gly Ile His Asn Phe Ser	
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Cys Pro Val Gly Gln Phe Ile Leu Gln Asn Leu Gly Leu Leu Phe Gly	
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Phe Ala Ile Met Leu Val Ile Ala Leu Tyr Glu Asp Lys Ile Val Phe

815

820

825

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830

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 aatgctgttt ttttttttca ttgtcaacag tgggtgtgtca ttttatgtat gttcctaag 5194
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30

Pro Glu Ala Leu His Arg Gln His Arg Gly Met Thr Glu Leu Glu Pro

35

40

45

Ser Lys Phe Ser Lys Gln Ala Ala Glu Asn Glu Lys Lys Tyr Tyr Ile

50

55

60

Glu Lys Leu Phe Glu Arg Tyr Gly Glu Asn Gly Arg Leu Ser Phe Phe

65

70

75

80

Gly Leu Glu Lys Leu Leu Thr Asn Leu Gly Leu Gly Glu Arg Lys Val

85

90

95

Val Glu Ile Asn His Glu Asp Leu Gly His Asp His Val Ser His Leu

100

105

110

Asp Ile Leu Ala Val Gln Glu Gly Lys His Phe His Ser His Asn His

115

120

125

Gln His Ser His Asn His Leu Asn Ser Glu Asn Gln Thr Val Thr Ser

130

135

140

Val Ser Thr Lys Arg Asn His Lys Cys Asp Pro Glu Lys Glu Thr Val

145

150

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Glu Val Ser Val Lys Ser Asp Asp Lys His Met His Asp His Asn His

165

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175

Arg Leu Arg His His His Arg Leu His His His Leu Asp His Asn Asn

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Thr His His Phe His Asn Asp Ser Ile Thr Pro Ser Glu Arg Gly Glu

195

200

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Pro Ser Asn Glu Pro Ser Thr Glu Thr Asn Lys Thr Gln Glu Gln Ser

210

215

220

Asp Val Lys Leu Pro Lys Gly Lys Arg Lys Lys Lys Gly Arg Lys Ser

225

230

235

240

Asn Glu Asn Ser Glu Val Ile Thr Pro Gly Phe Pro Pro Asn His Asp

245

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255

Gln Gly Glu Gln Tyr Glu His Asn Arg Val His Lys Pro Asp Arg Val

260

265

270

His Asn Pro Gly His Ser His Val His Leu Pro Glu Arg Asn Gly His

275

280

285

Asp Pro Gly Arg Gly His Gln Asp Leu Asp Pro Asp Asn Glu Gly Glu

290

295

300

Leu Arg His Thr Arg Lys Arg Glu Ala Pro His Val Lys Asn Asn Ala

305

310

315

320

Ile Ile Ser Leu Arg Lys Asp Leu Asn Glu Asp Asp His His His Glu
 325 330 335

Cys Leu Asn Val Thr Gln Leu Leu Lys Tyr Tyr Gly His Gly Ala Asn
 340 345 350

Ser Pro Ile Ser Thr Asp Leu Phe Thr Tyr Leu Cys Pro Ala Leu Leu
 355 360 365

Tyr Gln Ile Asp Ser Arg Leu Cys Ile Glu His Phe Asp Lys Leu Leu
 370 375 380

Val Glu Asp Ile Asn Lys Asp Lys Asn Leu Val Pro Glu Asp Glu Ala
 385 390 395 400

Asn Ile Gly Ala Ser Ala Trp Ile Cys Gly Ile Ile Ser Ile Thr Val
 405 410 415

Ile Ser Leu Leu Ser Leu Leu Gly Val Ile Leu Val Pro Ile Ile Asn
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Gln Gly Cys Phe Lys Phe Leu Leu Thr Phe Leu Val Ala Leu Ala Val
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Gly Thr Met Ser Gly Asp Ala Leu Leu His Leu Leu Pro His Ser Gln

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465	470	475	480
His Gly His Glu Ser Asn Lys Phe Leu Glu Glu Tyr Asp Ala Val Leu			
	485	490	495
Lys Gly Leu Val Ala Leu Gly Gly Ile Tyr Leu Leu Phe Ile Ile Glu			
500	505	510	
His Cys Ile Arg Met Phe Lys His Tyr Lys Gln Gln Arg Gly Lys Gln			
515	520	525	
Lys Trp Phe Met Lys Gln Asn Thr Glu Glu Ser Thr Ile Gly Arg Lys			
530	535	540	
Leu Ser Asp His Lys Leu Asn Asn Thr Pro Asp Ser Asp Trp Leu Gln			
545	550	555	560
Leu Lys Pro Leu Ala Gly Thr Asp Asp Ser Val Val Ser Glu Asp Arg			
	565	570	575
Leu Asn Glu Thr Glu Leu Thr Asp Leu Glu Gly Gln Gln Glu Ser Pro			
580	585	590	
Pro Lys Asn Tyr Leu Cys Ile Glu Glu Glu Lys Ile Ile Asp His Ser			

595

600

605

His Ser Asp Gly Leu His Thr Ile His Glu His Asp Leu His Ala Ala
 610 615 620

Ala His Asn His His Gly Glu Asn Lys Thr Val Leu Arg Lys His Asn
 625 630 635 640

His Gln Trp His His Lys His Ser His His Ser His Gly Pro Cys His
 645 650 655

Ser Gly Ser Asp Leu Lys Glu Thr Gly Ile Ala Asn Ile Ala Trp Met
 660 665 670

Val Ile Met Gly Asp Gly Ile His Asn Phe Ser Asp Gly Leu Ala Ile
 675 680 685

Gly Ala Ala Phe Ser Ala Gly Leu Thr Gly Gly Ile Ser Thr Ser Ile
 690 695 700

Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val
 705 710 715 720

Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Ile Val Tyr Asn Leu
 725 730 735

Leu Ser Ala Met Met Ala Tyr Ile Gly Met Leu Ile Gly Thr Ala Val

740

745

750

Gly Gln Tyr Ala Asn Asn Ile Thr Leu Trp Ile Phe Ala Val Thr Ala

755

760

765

Gly Met Phe Leu Tyr Val Ala Leu Val Asp Met Leu Pro Glu Met Leu

770

775

780

His Gly Asp Gly Asp Asn Glu Glu His Gly Phe Cys Pro Val Gly Gln

785

790

795

800

Phe Ile Leu Gln Asn Leu Gly Leu Leu Phe Gly Phe Ala Ile Met Leu

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810

815

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gaggagacga aggcgca atg gcg agg aag tta tct gta atc ttg atc ctg	170
Met Ala Arg Lys Leu Ser Val Ile Leu Ile Leu	
1 5 10	
acc ttt gcc ctc tct gtc aca aat ccc ctt cat gaa cta aaa gca gct	218
Thr Phe Ala Leu Ser Val Thr Asn Pro Leu His Glu Leu Lys Ala Ala	
15 20 25	
gct ttc ccc cag acc act gag aaa att agt cgg aat tgg gaa tct ggc	266
Ala Phe Pro Gln Thr Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly	
30 35 40	
att aat gtt gac ttg gca att tcc aca cgg caa tat cat cta caa cag	314
Ile Asn Val Asp Leu Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln	
45 50 55	
ctt ttc tac cgc tat gga gaa aat aat tct ttg tca gtt gaa ggg ttc	362
Leu Phe Tyr Arg Tyr Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe	
60 65 70 75	
aga aaa tta ctt caa aat ata ggc ata gat aag att aaa aga atc cat	410
Arg Lys Leu Leu Gln Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His	
80 85 90	
ata cac cat gac cac gac cat cac tca gac cac gag cat cac tca gac	458
Ile His His Asp His Asp His His Ser Asp His Glu His His Ser Asp	
95 100 105	
cat gag cgt cac tca gac cat gag cat cac tca gac cac gag cat cac	506
His Glu Arg His Ser Asp His Glu His His Ser Asp His Glu His His	
110 115 120	
tct gac cat aat cat gct gct tct ggt aaa aat aag cga aaa gct ctt	554
Ser Asp His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu	

125	130	135	
tgc cca gac cat gac tca gat agt tca ggt aaa gat cct aga aac agc			602
Cys Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser			
140	145	150	155
cag ggg aaa gga gct cac cga cca gaa cat gcc agt ggt aga agg aat			650
Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg Asn			
160	165	170	
gtc aag gac agt gtt agt gct agt gaa gtg acc tca act gtg tac aac			698
Val Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn			
175	180	185	
act gtc tct gaa gga act cac ttt cta gag aca ata gag act cca aga			746
Thr Val Ser Glu Gly Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg			
190	195	200	
cct gga aaa ctc ttc ccc aaa gat gta agc agc tcc act cca ccc agt			794
Pro Gly Lys Leu Phe Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser			
205	210	215	
gtc aca tca aag agc cgg gtg agc cgg ctg gct ggt agg aaa aca aat			842
Val Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn			
220	225	230	235
gaa tct gtg agt gag ccc cga aaa ggc ttt atg tat tcc aga aac aca			890
Glu Ser Val Ser Glu Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr			
240	245	250	
aat gaa aat cct cag gag tgt ttc aat gca tca aag cta ctg aca tct			938
Asn Glu Asn Pro Gln Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser			
255	260	265	
cat ggc atg ggc atc cag gtt cgg ctg aat gca aca gag ttc aac tat			986
His Gly Met Gly Ile Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr			

270	275	280	
ctc tgt cca gcc atc atc aac caa att gat gct aga tct tgt ctg att			1034
Leu Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile			
285	290	295	
cat aca agt gaa aag aag gct gaa atc cct cca aag acc tat tca tta			1082
His Thr Ser Glu Lys Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu			
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caa ata gcc tgg gtt ggt ggt ttt ata gcc att tcc atc atc agt ttc			1130
Gln Ile Ala Trp Val Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe			
320	325	330	
ctg tct ctg ctg ggg gtt atc tta gtg cct ctc atg aat cgg gtg ttt			1178
Leu Ser Leu Leu Gly Val Ile Leu Val Pro Leu Met Asn Arg Val Phe			
335	340	345	
ttc aaa ttt ctc ctg agt ttc ctt gtg gca ctg gcc gtt ggg act ttg			1226
Phe Lys Phe Leu Leu Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu			
350	355	360	
agt ggt gat gct ttt tta cac ctt ctt cca cat tct cat gca agt cac			1274
Ser Gly Asp Ala Phe Leu His Leu Leu Pro His Ser His Ala Ser His			
365	370	375	
cac cat agt cat agc cat gaa gaa cca gca atg gaa atg aaa aga gga			1322
His His Ser His Ser His Glu Glu Pro Ala Met Glu Met Lys Arg Gly			
380	385	390	395
cca ctt ttc agt cat ctg tct tct caa aac ata gaa gaa agt gcc tat			1370
Pro Leu Phe Ser His Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala Tyr			
400	405	410	
ttt gat tcc acg tgg aag ggt cta aca gct cta gga ggc ctg tat ttc			1418
Phe Asp Ser Thr Trp Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr Phe			

415	420	425	
atg ttt ctt gtt gaa cat gtc ctc aca ttg atc aaa caa ttt aaa gat			1466
Met Phe Leu Val Glu His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp			
430	435	440	
aag aag aaa aag aat cag aag aaa cct gaa aat gat gat gat gtg gag			1514
Lys Lys Lys Lys Asn Gln Lys Lys Pro Glu Asn Asp Asp Asp Val Glu			
445	450	455	
att aag aag cag ttg tcc aag tat gaa tct caa ctt tca aca aat gag			1562
Ile Lys Lys Gln Leu Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn Glu			
460	465	470	475
gag aaa gta gat aca gat gat cga act gaa ggc tat tta cga gca gac			1610
Glu Lys Val Asp Thr Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp			
480	485	490	
tca caa gag ccc tcc cac ttt gat tct cag cag cct gca gtc ttg gaa			1658
Ser Gln Glu Pro Ser His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu			
495	500	505	
gaa gaa gag gtc atg ata gct cat gct cat cca cag gaa gtc tac aat			1706
Glu Glu Glu Val Met Ile Ala His Ala His Pro Gln Glu Val Tyr Asn			
510	515	520	
gaa tat gta ccc aga ggg tgc aag aat aaa tgc cat tca cat ttc cac			1754
Glu Tyr Val Pro Arg Gly Cys Lys Asn Lys Cys His Ser His Phe His			
525	530	535	
gat aca ctc ggc cag tca gac gat ctc att cac cac cat cat gac tac			1802
Asp Thr Leu Gly Gln Ser Asp Asp Leu Ile His His His His Asp Tyr			
540	545	550	555
cat cat att ctc cat cat cac cac cac caa aac cac cat cct cac agt			1850
His His Ile Leu His His His His His Gln Asn His His Pro His Ser			

560	565	570	
cac agc cag cgc tac tct cgg gag gag ctg aaa gat gcc ggc gtc gcc			1898
His Ser Gln Arg Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala			
575	580	585	
act ttg gcc tgg atg gtg ata atg ggt gat ggc ctg cac aat ttc agc			1946
Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe Ser			
590	595	600	
gat ggc cta gca att ggt gct gct ttt act gaa ggc tta tca agt ggt			1994
Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly			
605	610	615	
tta agt act tct gtt gct gtg ttc tgt cat gag ttg cct cat gaa tta			2042
Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu			
620	625	630	635
ggt gac ttt gct gtt cta cta aag gct ggc atg acc gtt aag cag gct			2090
Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala			
640	645	650	
gtc ctt tat aat gca ttg tca gcc atg ctg gcg tat ctt gga atg gca			2138
Val Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala			
655	660	665	
aca gga att ttc att ggt cat tat gct gaa aat gtt tct atg tgg ata			2186
Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile			
670	675	680	
ttt gca ctt act gct ggc tta ttc atg tat gtt gct ctg gtt gat atg			2234
Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met			
685	690	695	
gta cct gaa atg ctg cac aat gat gct agt gac cat gga tgt agc cgc			2282
Val Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser Arg			

700	705	710	715	
tgg ggg tat ttc ttt tta cag aat gct ggg atg ctt ttg ggt ttt gga				2330
Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly				
	720	725	730	
att atg tta ctt att tcc ata ttt gaa cat aaa atc gtg ttt cgt ata				2378
Ile Met Leu Leu Ile Ser Ile Phe Glu His Lys Ile Val Phe Arg Ile				
	735	740	745	
aat ttc tag ttaaggttta aatgctagag tagcttaaaa agttgtcata				2427
Asn Phe				
gtttcagtag gtcatagga gatgagtttg tatgctgtac tatgcagcgt ttaaagttag				2487
tgggttttgt gattttttgta ttgaatattg ctgtctgtta caaagtcagt taaaggtacg				2547
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taccagttta ttatgtaaac aagagatttg gcatgacatg ttctgtatgt ttcagggaaa				2667
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 20 25 30

Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu
 35 40 45

Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr
 50 55 60

Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln
 65 70 75 80

Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His
 85 90 95

Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser
 100 105 110

Asp His Glu His His Ser Asp His Glu His His Ser Asp His Asn His
 115 120 125

Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu Cys Pro Asp His Asp
 130 135 140

Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser Gln Gly Lys Gly Ala
 145 150 155 160

His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val Lys Asp Ser Val
 165 170 175

Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn Thr Val Ser Glu Gly
 180 185 190

Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg Pro Gly Lys Leu Phe
 195 200 205

Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser Val Thr Ser Lys Ser
 210 215 220

Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn Glu Ser Val Ser Glu
 225 230 235 240

Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr Asn Glu Asn Pro Gln
 245 250 255

Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser His Gly Met Gly Ile
 260 265 270

Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr Leu Cys Pro Ala Ile
 275 280 285

Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile His Thr Ser Glu Lys
 290 295 300

Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu Gln Ile Ala Trp Val
305 310 315 320

Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe Leu Ser Leu Leu Gly
325 330 335

Val Ile Leu Val Pro Leu Met Asn Arg Val Phe Phe Lys Phe Leu Leu
340 345 350

Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu Ser Gly Asp Ala Phe
355 360 365

Leu His Leu Leu Pro His Ser His Ala Ser His His His Ser His Ser
370 375 380

His Glu Glu Pro Ala Met Glu Met Lys Arg Gly Pro Leu Phe Ser His
385 390 395 400

Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala Tyr Phe Asp Ser Thr Trp
405 410 415

Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr Phe Met Phe Leu Val Glu
420 425 430

His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp Lys Lys Lys Lys Asn
435 440 445

Gln Lys Lys Pro Glu Asn Asp Asp Asp Val Glu Ile Lys Lys Gln Leu
 450 455 460

Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn Glu Glu Lys Val Asp Thr
 465 470 475 480

Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp Ser Gln Glu Pro Ser
 485 490 495

His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu Glu Glu Glu Val Met
 500 505 510

Ile Ala His Ala His Pro Gln Glu Val Tyr Asn Glu Tyr Val Pro Arg
 515 520 525

Gly Cys Lys Asn Lys Cys His Ser His Phe His Asp Thr Leu Gly Gln
 530 535 540

Ser Asp Asp Leu Ile His His His His Asp Tyr His His Ile Leu His
 545 550 555 560

His His His His Gln Asn His His Pro His Ser His Ser Gln Arg Tyr
 565 570 575

Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala Thr Leu Ala Trp Met
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Val Ile Met Gly Asp Gly Leu His Asn Phe Ser Asp Gly Leu Ala Ile
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Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly Leu Ser Thr Ser Val
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Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val
 625 630 635 640

Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Val Leu Tyr Asn Ala
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Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala Thr Gly Ile Phe Ile
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Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe Ala Leu Thr Ala
 675 680 685

Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met Val Pro Glu Met Leu
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His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp Gly Tyr Phe Phe
 705 710 715 720

Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile Met Leu Leu Ile
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Met Lys Leu Leu Leu Leu His Pro Ala

1

5

ttc cag agc tgc ctc ctg ctg acc ctg ctt ggc tta tgg aga acc acc 221

Phe Gln Ser Cys Leu Leu Leu Thr Leu Leu Gly Leu Trp Arg Thr Thr

10

15

20

25

cct gag gct cac gct tca tcc ctg ggt gca cca gct atc agc gct gcc 269

Pro Glu Ala His Ala Ser Ser Leu Gly Ala Pro Ala Ile Ser Ala Ala

30

35

40

tcc ttc ctg cag gat cta ata cat cgg tat ggc gag ggt gac agc ccc 317

Ser Phe Leu Gln Asp Leu Ile His Arg Tyr Gly Glu Gly Asp Ser Pro

45

50

55

act ctg cag cag ctg aag gcc cta ctc aac cac ctg gat gtg gga gtg	365
Thr Leu Gln Gln Leu Lys Ala Leu Leu Asn His Leu Asp Val Gly Val	
60 65 70	
ggc cgg ggt aat gtc acc cag cac gtg caa gga cac agg aac ctc tcc	413
Gly Arg Gly Asn Val Thr Gln His Val Gln Gly His Arg Asn Leu Ser	
75 80 85	
acg tgc ttt agt tct gga gac ctc ttc act gcc cac aat ttc agc gag	461
Thr Cys Phe Ser Ser Gly Asp Leu Phe Thr Ala His Asn Phe Ser Glu	
90 95 100 105	
cag tcg cgg att ggg agc agc gag ctc cag gag ttc tgc ccc acc atc	509
Gln Ser Arg Ile Gly Ser Ser Glu Leu Gln Glu Phe Cys Pro Thr Ile	
110 115 120	
ctc cag cag ctg gat tcc cgg gcc tgc acc tcg gag aac cag gaa aac	557
Leu Gln Gln Leu Asp Ser Arg Ala Cys Thr Ser Glu Asn Gln Glu Asn	
125 130 135	
gag gag aat gag cag acg gag gag ggg cgg cca agc gct gtt gaa gtg	605
Glu Glu Asn Glu Gln Thr Glu Glu Gly Arg Pro Ser Ala Val Glu Val	
140 145 150	
tgg ggc ttt ggt ttt ctc agt gtc tca ctg att aac ctg gcc tct ctc	653
Trp Gly Phe Gly Phe Leu Ser Val Ser Leu Ile Asn Leu Ala Ser Leu	
155 160 165	
ctg gga gtc ctc gtc ctg ccc tgc aca gag aaa gcg ttt ttc agc cgt	701
Leu Gly Val Leu Val Leu Pro Cys Thr Glu Lys Ala Phe Phe Ser Arg	
170 175 180 185	
gtg ctc act tac ttc atc gcc ctg tcc att gga acg ctg ctg tct aac	749
Val Leu Thr Tyr Phe Ile Ala Leu Ser Ile Gly Thr Leu Leu Ser Asn	
190 195 200	

gcg cta ttc cag ctc atc cca gag gca ttt ggt ttc aac cct ctg gaa	797
Ala Leu Phe Gln Leu Ile Pro Glu Ala Phe Gly Phe Asn Pro Leu Glu	
205 210 215	
 gat tat tat gtc tcc aag tct gca gtg gtg ttt ggg ggc ttt tat ctt	845
Asp Tyr Tyr Val Ser Lys Ser Ala Val Val Phe Gly Gly Phe Tyr Leu	
220 225 230	
 ttc ttt ttc aca gag aag atc ttg aag att ctt ctt aag cag aaa aat	893
Phe Phe Phe Thr Glu Lys Ile Leu Lys Ile Leu Leu Lys Gln Lys Asn	
235 240 245	
 gag cat cat cat gga cac agc cat tat gcc tct gag tcg ctt ccc tcc	941
Glu His His His Gly His Ser His Tyr Ala Ser Glu Ser Leu Pro Ser	
250 255 260 265	
 aag aag gac cag gag gag ggg gtg atg gag aag ctg cag aac ggg gac	989
Lys Lys Asp Gln Glu Glu Gly Val Met Glu Lys Leu Gln Asn Gly Asp	
270 275 280	
 ctg gac cac atg att cct cag cac tgc agc agt gag ctg gac ggc aag	1037
Leu Asp His Met Ile Pro Gln His Cys Ser Ser Glu Leu Asp Gly Lys	
285 290 295	
 gcg ccc atg gtg gac gag aag gtc att gtg ggc tcg ctc tct gtg cag	1085
Ala Pro Met Val Asp Glu Lys Val Ile Val Gly Ser Leu Ser Val Gln	
300 305 310	
 gac ctg cag gct tcc cag agt gct tgc tac tgg ctg aaa ggt gtc cgc	1133
Asp Leu Gln Ala Ser Gln Ser Ala Cys Tyr Trp Leu Lys Gly Val Arg	
315 320 325	
 tac tct gat atc ggc act ctg gcc tgg atg atc act ctg agc gac ggc	1181
Tyr Ser Asp Ile Gly Thr Leu Ala Trp Met Ile Thr Leu Ser Asp Gly	
330 335 340 345	

ctc cat aat ttc atc gat ggc ctg gcc atc ggt gct tcc ttc act gtg	1229
Leu His Asn Phe Ile Asp Gly Leu Ala Ile Gly Ala Ser Phe Thr Val	
350 355 360	
tca gtt ttc caa ggc atc agc acc tcg gtg gcc atc ctc tgt gag gag	1277
Ser Val Phe Gln Gly Ile Ser Thr Ser Val Ala Ile Leu Cys Glu Glu	
365 370 375	
ttc cca cgt gag cta gga gac ttt gtc atc ctg ctc aac gct ggg atg	1325
Phe Pro Arg Glu Leu Gly Asp Phe Val Ile Leu Leu Asn Ala Gly Met	
380 385 390	
agc atc caa caa gct ctc ttc ttc aac ttc ctt tct gcc tgc tgc tgc	1373
Ser Ile Gln Gln Ala Leu Phe Phe Asn Phe Leu Ser Ala Cys Cys Cys	
395 400 405	
tac ctg ggt ctg gcc ttt ggc atc ctg gcc ggc agc cac ttc tct gcc	1421
Tyr Leu Gly Leu Ala Phe Gly Ile Leu Ala Gly Ser His Phe Ser Ala	
410 415 420 425	
aac tgg att ttt gcg cta gct gga gga atg ttc ttg tat att tct ctg	1469
Asn Trp Ile Phe Ala Leu Ala Gly Gly Met Phe Leu Tyr Ile Ser Leu	
430 435 440	
gct gat atg ttc cct gag atg aat gag gtc tgt caa gag gat gaa agg	1517
Ala Asp Met Phe Pro Glu Met Asn Glu Val Cys Gln Glu Asp Glu Arg	
445 450 455	
aag ggc agc atc ttg att cca ttt atc atc cag aac ctg ggc ctc ctg	1565
Lys Gly Ser Ile Leu Ile Pro Phe Ile Ile Gln Asn Leu Gly Leu Leu	
460 465 470	
act gga ttc acc atc atg gtg gtc ctc acc atg tat tca gga cag atc	1613
Thr Gly Phe Thr Ile Met Val Val Leu Thr Met Tyr Ser Gly Gln Ile	
475 480 485	

cag att ggg tag ggctctgcc aagacctgtg ggactggaag tcgggccctg 1665
 Gln Ile Gly
 490

ggctgcccga tcgccagccc gaggacttac catccacaat gcaccacgga agaggccgtt 1725
 ctatgaaaaa ctgacacaga ctgtattcct gcattcaaat gtcagccgtt tgtaaaatgc 1785
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 cttttttctc tgattacctt ggccctcctct tggaaaccagt gctgaaaggt tttgaatcct 1965
 ttaccaaca atgcaaaaat agagccaatg gttataactt ggctagaaat atcaagagtt 2025
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 agaagagaca ggagacagga agccttccca tttttcaaa gtctgtttta ttgcctatta 2145
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 ttctgtttta tttttctcaa gctgctttca ggagctagca gaaaataact caaagttgaa 3585
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aattgaaaaa tgaaataggg tgttttccct ttttgtgcac acctatatta ccttaagaaa	3825
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ggtcagtcct agtcggagct taggaggggc ggagacgctc acatcgtctg acttgagtcg	3945
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ttagttgttg aatttgctgt ttcaagcatt tgtacatatt agaagtctaa ggagtagcaa	4065
gtcagtggga ggactttttc acccctggca ttagcagctt cgacctcatt ttccagatgc	4125
accagctcct attaataagt tagcaaggaa agtgtatgtc acgtgcagga acagtgaggc	4185
agggacaggg gttctgctcc ttctcacttc accaccggca cacagcttgc ccctgtcttt	4245
gccccaaaag gtattttgtg tctagtgtca aattggagct attcttcact ggtccttaac	4305
cttgggtttt aaaaagaagg cttctctgtt tgggtagcgt aagagctgag tataagtaagt	4365
cctcttccaa agagatggca atatgctggg catctacttt aaaacaaagt tgtctgattt	4425
ttgcaagaga ggtaggatt ttattgttct tatttccctt tacagttctg cagttccatc	4485
acagtatttt tttaaataac tcaggtgtat gagaagaaat tagaaaagaa aattaactta	4545
tgtggactgt aaatgtttta ttgtgaagat tctataaata aagctatatt ctgtaattgt	4605
tgagaaaaaa aaaaaaaaaa aa	4627

<210> 32

<211> 492

<212> PRT

<213> Homo sapiens

<400> 32

Met Lys Leu Leu Leu Leu His Pro Ala Phe Gln Ser Cys Leu Leu Leu
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Thr Leu Leu Gly Leu Trp Arg Thr Thr Pro Glu Ala His Ala Ser Ser
 20 25 30

Leu Gly Ala Pro Ala Ile Ser Ala Ala Ser Phe Leu Gln Asp Leu Ile
 35 40 45

His Arg Tyr Gly Glu Gly Asp Ser Pro Thr Leu Gln Gln Leu Lys Ala
 50 55 60

Leu Leu Asn His Leu Asp Val Gly Val Gly Arg Gly Asn Val Thr Gln
 65 70 75 80

His Val Gln Gly His Arg Asn Leu Ser Thr Cys Phe Ser Ser Gly Asp
 85 90 95

Leu Phe Thr Ala His Asn Phe Ser Glu Gln Ser Arg Ile Gly Ser Ser
 100 105 110

Glu Leu Gln Glu Phe Cys Pro Thr Ile Leu Gln Gln Leu Asp Ser Arg
 115 120 125

Ala Cys Thr Ser Glu Asn Gln Glu Asn Glu Glu Asn Glu Gln Thr Glu
 130 135 140

Glu Gly Arg Pro Ser Ala Val Glu Val Trp Gly Phe Gly Phe Leu Ser
 145 150 155 160

Val Ser Leu Ile Asn Leu Ala Ser Leu Leu Gly Val Leu Val Leu Pro
 165 170 175

Cys Thr Glu Lys Ala Phe Phe Ser Arg Val Leu Thr Tyr Phe Ile Ala
 180 185 190

Leu Ser Ile Gly Thr Leu Leu Ser Asn Ala Leu Phe Gln Leu Ile Pro
 195 200 205

Glu Ala Phe Gly Phe Asn Pro Leu Glu Asp Tyr Tyr Val Ser Lys Ser
 210 215 220

Ala Val Val Phe Gly Gly Phe Tyr Leu Phe Phe Phe Thr Glu Lys Ile
 225 230 235 240

Leu Lys Ile Leu Leu Lys Gln Lys Asn Glu His His His Gly His Ser
 245 250 255

His Tyr Ala Ser Glu Ser Leu Pro Ser Lys Lys Asp Gln Glu Glu Gly
 260 265 270

Val Met Glu Lys Leu Gln Asn Gly Asp Leu Asp His Met Ile Pro Gln
275 280 285

His Cys Ser Ser Glu Leu Asp Gly Lys Ala Pro Met Val Asp Glu Lys
290 295 300

Val Ile Val Gly Ser Leu Ser Val Gln Asp Leu Gln Ala Ser Gln Ser
305 310 315 320

Ala Cys Tyr Trp Leu Lys Gly Val Arg Tyr Ser Asp Ile Gly Thr Leu
325 330 335

Ala Trp Met Ile Thr Leu Ser Asp Gly Leu His Asn Phe Ile Asp Gly
340 345 350

Leu Ala Ile Gly Ala Ser Phe Thr Val Ser Val Phe Gln Gly Ile Ser
355 360 365

Thr Ser Val Ala Ile Leu Cys Glu Glu Phe Pro Arg Glu Leu Gly Asp
370 375 380

Phe Val Ile Leu Leu Asn Ala Gly Met Ser Ile Gln Gln Ala Leu Phe
385 390 395 400

Phe Asn Phe Leu Ser Ala Cys Cys Cys Tyr Leu Gly Leu Ala Phe Gly
405 410 415

Ile Leu Ala Gly Ser His Phe Ser Ala Asn Trp Ile Phe Ala Leu Ala
 420 425 430

Gly Gly Met Phe Leu Tyr Ile Ser Leu Ala Asp Met Phe Pro Glu Met
 435 440 445

Asn Glu Val Cys Gln Glu Asp Glu Arg Lys Gly Ser Ile Leu Ile Pro
 450 455 460

Phe Ile Ile Gln Asn Leu Gly Leu Leu Thr Gly Phe Thr Ile Met Val
 465 470 475 480

Val Leu Thr Met Tyr Ser Gly Gln Ile Gln Ile Gly
 485 490

<210> 33
 <211> 2178
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (87).. (2030)

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 Met Ala Ser Leu Val Ser Leu Glu Leu

1	5	
ggg ctg ctt ctg gct gtg ctg gtg gtg acg gcg acg gog tcc ccg cct	161	
Gly Leu Leu Leu Ala Val Leu Val Val Thr Ala Thr Ala Ser Pro Pro		
10 15 20 25		
gct ggt ctg ctg agc ctg ctc acc tct ggc cag ggc gct ctg gat caa	209	
Ala Gly Leu Leu Ser Leu Leu Thr Ser Gly Gln Gly Ala Leu Asp Gln		
30 35 40		
gag gct ctg ggc ggc ctg tta aat acg ctg gcg gac cgt gtg cac tgc	257	
Glu Ala Leu Gly Gly Leu Leu Asn Thr Leu Ala Asp Arg Val His Cys		
45 50 55		
acc aac ggg ccg tgt gga aag tgc ctg tct gtg gag gac gcc ctg ggc	305	
Thr Asn Gly Pro Cys Gly Lys Cys Leu Ser Val Glu Asp Ala Leu Gly		
60 65 70		
ctg ggc gag cct gag ggg tca ggg ctg ccc ccg ggc ccg gtc ctg gag	353	
Leu Gly Glu Pro Glu Gly Ser Gly Leu Pro Pro Gly Pro Val Leu Glu		
75 80 85		
gcc agg tac gtc gcc cgc ctc agt gcc gcc gcc gtc ctg tac ctc agc	401	
Ala Arg Tyr Val Ala Arg Leu Ser Ala Ala Ala Val Leu Tyr Leu Ser		
90 95 100 105		
aac ccc gag ggc acc tgt gag gac act cgg gct ggc ctc tgg gcc tct	449	
Asn Pro Glu Gly Thr Cys Glu Asp Thr Arg Ala Gly Leu Trp Ala Ser		
110 115 120		
cat gca gac cac ctc ctg gcc ctg ctc gag agc ccc aag gcc ctg acc	497	
His Ala Asp His Leu Leu Ala Leu Leu Glu Ser Pro Lys Ala Leu Thr		
125 130 135		
ccg ggc ctg agc tgg ctg ctg cag agg atg cag gcc cgg gct gcc ggc	545	
Pro Gly Leu Ser Trp Leu Leu Gln Arg Met Gln Ala Arg Ala Ala Gly		

140	145	150	
cag acc ccc aag acg gcc tgc gta gat atc cct cag ctg ctg gag gag			593
Gln Thr Pro Lys Thr Ala Cys Val Asp Ile Pro Gln Leu Leu Glu Glu			
155	160	165	
gcg gtg ggg gcg ggg gct ccg ggc agt gct ggc ggc gtc ctg gct gcc			641
Ala Val Gly Ala Gly Ala Pro Gly Ser Ala Gly Gly Val Leu Ala Ala			
170	175	180	185
ctg ctg gac cat gtc agg agc ggg tct tgc ttc cac gcc ttg ccg agc			689
Leu Leu Asp His Val Arg Ser Gly Ser Cys Phe His Ala Leu Pro Ser			
	190	195	200
cct cag tac ttc gtg gac ttt gtg ttc cag cag cac agc agc gag gtc			737
Pro Gln Tyr Phe Val Asp Phe Val Phe Gln Gln His Ser Ser Glu Val			
	205	210	215
cct atg acg ctg gcc gag ctg tca gcc ttg atg cag cgc ctg ggg gtg			785
Pro Met Thr Leu Ala Glu Leu Ser Ala Leu Met Gln Arg Leu Gly Val			
220	225	230	
ggc agg gag gcc cac agt gac cac agt cat cgg cac agg gga gcc agc			833
Gly Arg Glu Ala His Ser Asp His Ser His Arg His Arg Gly Ala Ser			
235	240	245	
agc cgg gac cct gtg ccc ctc atc agc tcc agc aac agc tcc agt gtg			881
Ser Arg Asp Pro Val Pro Leu Ile Ser Ser Ser Asn Ser Ser Ser Val			
250	255	260	265
tgg gac acg gta tgc ctg agt gcc agg gac gtg atg gct gca tat gga			929
Trp Asp Thr Val Cys Leu Ser Ala Arg Asp Val Met Ala Ala Tyr Gly			
	270	275	280
ctg tcg gaa cag gct ggg gtg acc ccg gag gcc tgg gcc caa ctg agc			977
Leu Ser Glu Gln Ala Gly Val Thr Pro Glu Ala Trp Ala Gln Leu Ser			

285	290	295	
cct gcc ctg ctc caa cag cag ctg agt gga gcc tgc acc tcc cag tcc			1025
Pro Ala Leu Leu Gln Gln Gln Leu Ser Gly Ala Cys Thr Ser Gln Ser			
300	305	310	
agg ccc ccc gtc cag gac cag ctc agc cag tca gag agg tat ctg tac			1073
Arg Pro Pro Val Gln Asp Gln Leu Ser Gln Ser Glu Arg Tyr Leu Tyr			
315	320	325	
ggc tcc ctg gcc acg ctg ctc atc tgc ctc tgc gcg gtc ttt ggc ctc			1121
Gly Ser Leu Ala Thr Leu Leu Ile Cys Leu Cys Ala Val Phe Gly Leu			
330	335	340	345
ctg ctg ctg acc tgc act ggc tgc agg ggg gtc acc cac tac atc ctg			1169
Leu Leu Leu Thr Cys Thr Gly Cys Arg Gly Val Thr His Tyr Ile Leu			
350	355	360	
cag acc ttc ctg agc ctg gca gtg ggt gca ctc act ggg gac gct gtc			1217
Gln Thr Phe Leu Ser Leu Ala Val Gly Ala Leu Thr Gly Asp Ala Val			
365	370	375	
ctg cat ctg acg ccc aag gtg ctg ggg ctg cat aca cac agc gaa gag			1265
Leu His Leu Thr Pro Lys Val Leu Gly Leu His Thr His Ser Glu Glu			
380	385	390	
ggc ctc agc cca cag ccc acc tgg cgc ctc ctg gct atg ctg gcc ggg			1313
Gly Leu Ser Pro Gln Pro Thr Trp Arg Leu Leu Ala Met Leu Ala Gly			
395	400	405	
ctc tac gcc ttc ttc ctg ttt gag aac ctc ttc aat ctc ctg ctg ccc			1361
Leu Tyr Ala Phe Phe Leu Phe Glu Asn Leu Phe Asn Leu Leu Leu Pro			
410	415	420	425
agg gac ccg gag gac ctg gag gac ggg ccc tgc ggc cac agc agc cat			1409
Arg Asp Pro Glu Asp Leu Glu Asp Gly Pro Cys Gly His Ser Ser His			

430	435	440	
agc cac ggg ggc cac agc cac ggt gtg tcc ctg cag ctg gca ccc agc			1457
Ser His Gly Gly His Ser His Gly Val Ser Leu Gln Leu Ala Pro Ser			
445	450	455	
gag ctc cgg cag ccc aag ccc ccc cac gag ggc tcc cgc gca gac ctg			1505
Glu Leu Arg Gln Pro Lys Pro Pro His Glu Gly Ser Arg Ala Asp Leu			
460	465	470	
gtg gcg gag gag agc ccg gag ctg ctg aac cct gag ccc agg aga ctg			1553
Val Ala Glu Glu Ser Pro Glu Leu Leu Asn Pro Glu Pro Arg Arg Leu			
475	480	485	
agc cca gag ttg agg cta ctg ccc tat atg atc act ctg ggc gac gcc			1601
Ser Pro Glu Leu Arg Leu Leu Pro Tyr Met Ile Thr Leu Gly Asp Ala			
490	495	500	505
gtg cac aac ttc gcc gac ggg ctg gcc gtg ggc gcc gcc ttc gcg tcc			1649
Val His Asn Phe Ala Asp Gly Leu Ala Val Gly Ala Ala Phe Ala Ser			
510	515	520	
tcc tgg aag acc ggg ctg gcc acc tcg ctg gcc gtg ttc tgc cac gag			1697
Ser Trp Lys Thr Gly Leu Ala Thr Ser Leu Ala Val Phe Cys His Glu			
525	530	535	
ttg cca cac gag ctg ggg gac ttc gcc gcc ttg ctg cac gcg ggg ctg			1745
Leu Pro His Glu Leu Gly Asp Phe Ala Ala Leu Leu His Ala Gly Leu			
540	545	550	
tcc gtg cgc caa gca ctg ctg ctg aac ctg gcc tcc gcg ctc acg gcc			1793
Ser Val Arg Gln Ala Leu Leu Leu Asn Leu Ala Ser Ala Leu Thr Ala			
555	560	565	
ttc gct ggt ctc tac gtg gca ctc gcg gtt gga gtc agc gag gag agc			1841
Phe Ala Gly Leu Tyr Val Ala Leu Ala Val Gly Val Ser Glu Glu Ser			

570	575	580	585	
gag gcc tgg atc ctg gca gtg gcc acc ggc ctg ttc ctc tac gta gca				1889
Glu Ala Trp Ile Leu Ala Val Ala Thr Gly Leu Phe Leu Tyr Val Ala				
	590	595	600	
ctc tgc gac atg ctc ccg gcg atg ttg aaa gta cgg gac ccg cgg ccc				1937
Leu Cys Asp Met Leu Pro Ala Met Leu Lys Val Arg Asp Pro Arg Pro				
	605	610	615	
tgg ctc ctc ttc ctg ctg cac aac gtg ggc ctg ctg ggc ggc tgg acc				1985
Trp Leu Leu Phe Leu Leu His Asn Val Gly Leu Leu Gly Gly Trp Thr				
	620	625	630	
gtc ctg ctg ctg ctg tcc ctg tac gag gat gac atc acc ttc tga				2030
Val Leu Leu Leu Leu Ser Leu Tyr Glu Asp Asp Ile Thr Phe				
	635	640	645	
taccctgccc tagtccccca cctttgactt aagatcccac acctcacaaa cctacagccc				2090
agaaaccaga agcccctata gaggccccag tcccaactcc agtaaagaca ctcttgtcct				2150
tggaaaaaaa aaaaaaaaaa aaaaaaaa				2178

<210> 34

<211> 647

<212> PRT

<213> Homo sapiens

<400> 34

Met Ala Ser Leu Val Ser Leu Glu Leu Gly Leu Leu Leu Ala Val Leu

1

5

10

15

Val Val Thr Ala Thr Ala Ser Pro Pro Ala Gly Leu Leu Ser Leu Leu
 20 25 30

Thr Ser Gly Gln Gly Ala Leu Asp Gln Glu Ala Leu Gly Gly Leu Leu
 35 40 45

Asn Thr Leu Ala Asp Arg Val His Cys Thr Asn Gly Pro Cys Gly Lys
 50 55 60

Cys Leu Ser Val Glu Asp Ala Leu Gly Leu Gly Glu Pro Glu Gly Ser
 65 70 75 80

Gly Leu Pro Pro Gly Pro Val Leu Glu Ala Arg Tyr Val Ala Arg Leu
 85 90 95

Ser Ala Ala Ala Val Leu Tyr Leu Ser Asn Pro Glu Gly Thr Cys Glu
 100 105 110

Asp Thr Arg Ala Gly Leu Trp Ala Ser His Ala Asp His Leu Leu Ala
 115 120 125

Leu Leu Glu Ser Pro Lys Ala Leu Thr Pro Gly Leu Ser Trp Leu Leu
 130 135 140

Gln Arg Met Gln Ala Arg Ala Ala Gly Gln Thr Pro Lys Thr Ala Cys
 145 150 155 160

Val Asp Ile Pro Gln Leu Leu Glu Glu Ala Val Gly Ala Gly Ala Pro
 165 170 175

Gly Ser Ala Gly Gly Val Leu Ala Ala Leu Leu Asp His Val Arg Ser
 180 185 190

Gly Ser Cys Phe His Ala Leu Pro Ser Pro Gln Tyr Phe Val Asp Phe
 195 200 205

Val Phe Gln Gln His Ser Ser Glu Val Pro Met Thr Leu Ala Glu Leu
 210 215 220

Ser Ala Leu Met Gln Arg Leu Gly Val Gly Arg Glu Ala His Ser Asp
 225 230 235 240

His Ser His Arg His Arg Gly Ala Ser Ser Arg Asp Pro Val Pro Leu
 245 250 255

Ile Ser Ser Ser Asn Ser Ser Ser Val Trp Asp Thr Val Cys Leu Ser
 260 265 270

Ala Arg Asp Val Met Ala Ala Tyr Gly Leu Ser Glu Gln Ala Gly Val
 275 280 285

Thr Pro Glu Ala Trp Ala Gln Leu Ser Pro Ala Leu Leu Gln Gln Gln
 290 295 300

Leu Ser Gly Ala Cys Thr Ser Gln Ser Arg Pro Pro Val Gln Asp Gln
 305 310 315 320

Leu Ser Gln Ser Glu Arg Tyr Leu Tyr Gly Ser Leu Ala Thr Leu Leu
 325 330 335

Ile Cys Leu Cys Ala Val Phe Gly Leu Leu Leu Leu Thr Cys Thr Gly
 340 345 350

Cys Arg Gly Val Thr His Tyr Ile Leu Gln Thr Phe Leu Ser Leu Ala
 355 360 365

Val Gly Ala Leu Thr Gly Asp Ala Val Leu His Leu Thr Pro Lys Val
 370 375 380

Leu Gly Leu His Thr His Ser Glu Glu Gly Leu Ser Pro Gln Pro Thr
 385 390 395 400

Trp Arg Leu Leu Ala Met Leu Ala Gly Leu Tyr Ala Phe Phe Leu Phe
 405 410 415

Glu Asn Leu Phe Asn Leu Leu Leu Pro Arg Asp Pro Glu Asp Leu Glu
 420 425 430

Asp Gly Pro Cys Gly His Ser Ser His Ser His Gly Gly His Ser His
 435 440 445

Gly Val Ser Leu Gln Leu Ala Pro Ser Glu Leu Arg Gln Pro Lys Pro
 450 455 460

Pro His Glu Gly Ser Arg Ala Asp Leu Val Ala Glu Glu Ser Pro Glu
 465 470 475 480

Leu Leu Asn Pro Glu Pro Arg Arg Leu Ser Pro Glu Leu Arg Leu Leu
 485 490 495

Pro Tyr Met Ile Thr Leu Gly Asp Ala Val His Asn Phe Ala Asp Gly
 500 505 510

Leu Ala Val Gly Ala Ala Phe Ala Ser Ser Trp Lys Thr Gly Leu Ala
 515 520 525

Thr Ser Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp
 530 535 540

Phe Ala Ala Leu Leu His Ala Gly Leu Ser Val Arg Gln Ala Leu Leu
 545 550 555 560

Leu Asn Leu Ala Ser Ala Leu Thr Ala Phe Ala Gly Leu Tyr Val Ala
 565 570 575

Leu Ala Val Gly Val Ser Glu Glu Ser Glu Ala Trp Ile Leu Ala Val
 580 585 590

Ala Thr Gly Leu Phe Leu Tyr Val Ala Leu Cys Asp Met Leu Pro Ala
 595 600 605

Met Leu Lys Val Arg Asp Pro Arg Pro Trp Leu Leu Phe Leu Leu His
 610 615 620

Asn Val Gly Leu Leu Gly Gly Trp Thr Val Leu Leu Leu Leu Ser Leu
 625 630 635 640

Tyr Glu Asp Asp Ile Thr Phe
 645

<210> 35
 <211> 3246
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (478)..(1860)

<220>
 <221> misc_feature
 <222> (2530)..(2530)
 <223> n is a, c, g, or t

<400> 35
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 catatgtaacg caaatcctgg ggcgtttgca aaccgggac cggggcgtct ggccccatgc 120

ccggccgggc gtttgagggc tactgccacg cagcgtttct ggagcctgcc ggctggtgcc	180
ctggtggcct ttatctctgt cccccccttgt cctctttatc tcaggctctc caggaggccg	240
ggggggccac tccgcctatc gctcccctcg gctacgctgc cactccaatg ccccgaggt	300
cgcgagctgc tgttctttcg aaggcgccgg agaaccaggg gcgtcccgg ccacctctga	360
ctcggagcag cgccgagcac tgacgctccc gcccttgggc aaggacgcca gtgcgcccgc	420
gcgcgtccct ctgcgcggca gcccgctcgc ggccctcaag gggaagccca ggccagg	477
atg gcc ccg ggt cgc gcg gtg gcc ggg ctc ctg ttg ctg gcg gcc gcc	525
Met Ala Pro Gly Arg Ala Val Ala Gly Leu Leu Leu Leu Ala Ala Ala	
1 5 10 15	
ggc ctc gga gga gtg gcg gag ggg cca ggg cta gcc ttc agc gag gat	573
Gly Leu Gly Gly Val Ala Glu Gly Pro Gly Leu Ala Phe Ser Glu Asp	
20 25 30	
gtg ctg agc gtg ttc ggc gcg aat ctg agc ctg tcg gcg gcg cag ctc	621
Val Leu Ser Val Phe Gly Ala Asn Leu Ser Leu Ser Ala Ala Gln Leu	
35 40 45	
cag cac ttg ctg gag cag atg gga gcc gcc tcc cgc gtg ggc gtc ccg	669
Gln His Leu Leu Glu Gln Met Gly Ala Ala Ser Arg Val Gly Val Pro	
50 55 60	
gag cct ggc cag ctg cac ttc aac cag tgt tta act gct gaa gag atc	717
Glu Pro Gly Gln Leu His Phe Asn Gln Cys Leu Thr Ala Glu Glu Ile	
65 70 75 80	
ttt tcc ctt cat ggc ttt tca aat gct acc caa ata acc agc tcc aaa	765
Phe Ser Leu His Gly Phe Ser Asn Ala Thr Gln Ile Thr Ser Ser Lys	
85 90 95	

ttc tct gtc atc tgt cca gca gtc tta cag caa ttg aac ttt cac cca	813
Phe Ser Val Ile Cys Pro Ala Val Leu Gln Gln Leu Asn Phe His Pro	
100 105 110	
tgt gag gat cgg ccc aag cac aaa aca aga cca agt cat tca gaa gtt	861
Cys Glu Asp Arg Pro Lys His Lys Thr Arg Pro Ser His Ser Glu Val	
115 120 125	
tgg gga tat gga ttc ctg tca gtg acg att att aat ctg gca tct ctc	909
Trp Gly Tyr Gly Phe Leu Ser Val Thr Ile Ile Asn Leu Ala Ser Leu	
130 135 140	
ctc gga ttg att ttg act cca ctg ata aag aaa tct tat ttc cca aag	957
Leu Gly Leu Ile Leu Thr Pro Leu Ile Lys Lys Ser Tyr Phe Pro Lys	
145 150 155 160	
att ttg acc ttt ttt gtg ggg ctg gct att ggg act ctt ttt tca aat	1005
Ile Leu Thr Phe Phe Val Gly Leu Ala Ile Gly Thr Leu Phe Ser Asn	
165 170 175	
gca att ttc caa ctt att cca gag gca ttt gga ttt gat ccc aaa gtc	1053
Ala Ile Phe Gln Leu Ile Pro Glu Ala Phe Gly Phe Asp Pro Lys Val	
180 185 190	
gac agt tat gtt gag aag gca gtt gct gtg ttt ggt gga ttt tac cta	1101
Asp Ser Tyr Val Glu Lys Ala Val Ala Val Phe Gly Gly Phe Tyr Leu	
195 200 205	
ctt ttc ttt ttt gaa aga atg cta aag atg tta tta aag aca tat ggt	1149
Leu Phe Phe Phe Glu Arg Met Leu Lys Met Leu Leu Lys Thr Tyr Gly	
210 215 220	
cag aat ggt cat acc cac ttt gga aat gat aac ttt ggt cct caa gaa	1197
Gln Asn Gly His Thr His Phe Gly Asn Asp Asn Phe Gly Pro Gln Glu	
225 230 235 240	

aaa act cat caa cct aaa gca tta cct gcc atc aat ggt gtg aca tgc	1245
Lys Thr His Gln Pro Lys Ala Leu Pro Ala Ile Asn Gly Val Thr Cys	
245 250 255	
tat gca aat cct gct gtc aca gaa gct aat gga cat atc cat ttt gat	1293
Tyr Ala Asn Pro Ala Val Thr Glu Ala Asn Gly His Ile His Phe Asp	
260 265 270	
aat gtc agt gtg gta tct cta cag gat gga aaa aaa gag cca agt tca	1341
Asn Val Ser Val Val Ser Leu Gln Asp Gly Lys Lys Glu Pro Ser Ser	
275 280 285	
tgt acc tgt ttg aag ggg ccc aaa ctg tca gaa ata ggg acg att gcc	1389
Cys Thr Cys Leu Lys Gly Pro Lys Leu Ser Glu Ile Gly Thr Ile Ala	
290 295 300	
tgg atg ata acg ctc tgc gat gcc ctc cac aat ttc atc gat ggc ctg	1437
Trp Met Ile Thr Leu Cys Asp Ala Leu His Asn Phe Ile Asp Gly Leu	
305 310 315 320	
gcg att ggg gct tcc tgc acc ttg tct ctc ctt cag gga ctc agt act	1485
Ala Ile Gly Ala Ser Cys Thr Leu Ser Leu Leu Gln Gly Leu Ser Thr	
325 330 335	
toc ata gca atc cta tgt gag gag ttt ccc cac gag tta gga gac ttt	1533
Ser Ile Ala Ile Leu Cys Glu Glu Phe Pro His Glu Leu Gly Asp Phe	
340 345 350	
gtg atc cta ctc aat gca ggg atg agc act cga caa gcc ttg cta ttc	1581
Val Ile Leu Leu Asn Ala Gly Met Ser Thr Arg Gln Ala Leu Leu Phe	
355 360 365	
aac ttc ctt tct gca tgt tcc tgc tat gtt ggg cta gct ttt ggc att	1629
Asn Phe Leu Ser Ala Cys Ser Cys Tyr Val Gly Leu Ala Phe Gly Ile	
370 375 380	

ttg gtg ggc aac aat ttc gct cca aat att ata ttt gca ctt gct gga	1677
Leu Val Gly Asn Asn Phe Ala Pro Asn Ile Ile Phe Ala Leu Ala Gly	
385 390 395 400	
ggc atg ttc ctc tat att tct ctg gca gat atg ttt cca gag atg aat	1725
Gly Met Phe Leu Tyr Ile Ser Leu Ala Asp Met Phe Pro Glu Met Asn	
405 410 415	
gat atg ctg aga gaa aag gta act gga aga aaa acc gat ttc acc ttc	1773
Asp Met Leu Arg Glu Lys Val Thr Gly Arg Lys Thr Asp Phe Thr Phe	
420 425 430	
ttc atg att cag aat gct gga atg tta act gga ttc aca gcc att cta	1821
Phe Met Ile Gln Asn Ala Gly Met Leu Thr Gly Phe Thr Ala Ile Leu	
435 440 445	
ctc att acc ttg tat gca gga gaa atc gaa ttg gag taa tagaaaatgg	1870
Leu Ile Thr Leu Tyr Ala Gly Glu Ile Glu Leu Glu	
450 455 460	
aagatgggtgt tgtaataaaa ggcatttaaat agataaaaac atctccaaaa aggattttga	1930
agctgatcct atttagttaa aaagataatt ttgctttcaa ctgtaggtcc agaaaactaa	1990
ttattggcat cagtctgtga aatagtccat tatttgttgt taaaaatgct tcaaaagggt	2050
ttcagtgta gtcctgatg cctggtatat aggagccttt gggaaatact tatttttcag	2110
tattccatgc atattagata tcaccatgaa gcaagagaca tgcattctat aatcatgtag	2170
acactcagac tcaggggaaa atacaagtta tatcctgaaa gcctttaaaa ctctatggta	2230
ggatcaaaga ttcaaatggt ttcagagagg ttttatttca attaatttgt tctagtgcct	2290
tcaagagcaa gtacatcaaa atgtagaagg taaaatgtat gcaacactaa tataaattat	2350

tccaagtctt taaggagcca aagaaaaaaa agatttctca cagctttttg ttctgttttg 2410
 tatttcaatt aggaacttgc agtattatit tgaaaacat tctaaaataa taggagttag 2470
 gaaataaata aagttttgct agccctgcta agttcaggct tagaggctta tcgctaagtn 2530
 taaacttcac cagattccac gaaaagctgg atagcttttt ttctgactta tgttgtggtt 2590
 gcacccctca caaatggcag aacagtatgt aaagctggta acacctoggt ttcagtgcac 2650
 catgtgtttg ctttgtgaag gtgaagaata tgttggttta gagaaagaaa ttggatgtaa 2710
 ttttatgcaa ttacttttta aagacaaaca taactattta gcagagaata ttttaataaa 2770
 tgcaaaacaa cagctggact gctgtacatc aaggacagat taactggaaa acatatgttc 2830
 cttatgtgtg attgagagcc attcagaaaa gacttccttt gtgttcagcc tatacttttc 2890
 catatggtat accttgaaaa aaattagcac accatggtta ttttctacc tttataaaa 2950
 gacagagcct gtttactcat ttagaagata gagaaaattg gtctaaaatt gaacatccta 3010
 gattcacact cccaagtcac ttaagtgat ttgatgggtga ggaaaatgat tgacaaagcc 3070
 caacaatgat ctgaggaatt acattttcca acagaccaa aaatgttttc atgtagcagc 3130
 aatgcagatt tggatgaatat ttaatatata ttttagtatg tatttcaatt tatgactgac 3190
 aattaaaaaa tattgttttg ccaaatagta aacacccttt tgaaaccatg aaaaaa 3246

<210> 36

<211> 460

<212> PRT

<213> Homo sapiens

<400> 36

Met Ala Pro Gly Arg Ala Val Ala Gly Leu Leu Leu Leu Ala Ala Ala
 1 5 10 15

Gly Leu Gly Gly Val Ala Glu Gly Pro Gly Leu Ala Phe Ser Glu Asp
 20 25 30

Val Leu Ser Val Phe Gly Ala Asn Leu Ser Leu Ser Ala Ala Gln Leu
 35 40 45

Gln His Leu Leu Glu Gln Met Gly Ala Ala Ser Arg Val Gly Val Pro
 50 55 60

Glu Pro Gly Gln Leu His Phe Asn Gln Cys Leu Thr Ala Glu Glu Ile
 65 70 75 80

Phe Ser Leu His Gly Phe Ser Asn Ala Thr Gln Ile Thr Ser Ser Lys
 85 90 95

Phe Ser Val Ile Cys Pro Ala Val Leu Gln Gln Leu Asn Phe His Pro
 100 105 110

Cys Glu Asp Arg Pro Lys His Lys Thr Arg Pro Ser His Ser Glu Val
 115 120 125

Trp Gly Tyr Gly Phe Leu Ser Val Thr Ile Ile Asn Leu Ala Ser Leu
 130 135 140

Leu Gly Leu Ile Leu Thr Pro Leu Ile Lys Lys Ser Tyr Phe Pro Lys
 145 150 155 160

Ile Leu Thr Phe Phe Val Gly Leu Ala Ile Gly Thr Leu Phe Ser Asn
 165 170 175

Ala Ile Phe Gln Leu Ile Pro Glu Ala Phe Gly Phe Asp Pro Lys Val
 180 185 190

Asp Ser Tyr Val Glu Lys Ala Val Ala Val Phe Gly Gly Phe Tyr Leu
 195 200 205

Leu Phe Phe Phe Glu Arg Met Leu Lys Met Leu Leu Lys Thr Tyr Gly
 210 215 220

Gln Asn Gly His Thr His Phe Gly Asn Asp Asn Phe Gly Pro Gln Glu
 225 230 235 240

Lys Thr His Gln Pro Lys Ala Leu Pro Ala Ile Asn Gly Val Thr Cys
 245 250 255

Tyr Ala Asn Pro Ala Val Thr Glu Ala Asn Gly His Ile His Phe Asp
 260 265 270

Asn Val Ser Val Val Ser Leu Gln Asp Gly Lys Lys Glu Pro Ser Ser
 275 280 285

Cys Thr Cys Leu Lys Gly Pro Lys Leu Ser Glu Ile Gly Thr Ile Ala
 290 295 300

Trp Met Ile Thr Leu Cys Asp Ala Leu His Asn Phe Ile Asp Gly Leu
 305 310 315 320

Ala Ile Gly Ala Ser Cys Thr Leu Ser Leu Leu Gln Gly Leu Ser Thr
 325 330 335

Ser Ile Ala Ile Leu Cys Glu Glu Phe Pro His Glu Leu Gly Asp Phe
 340 345 350

Val Ile Leu Leu Asn Ala Gly Met Ser Thr Arg Gln Ala Leu Leu Phe
 355 360 365

Asn Phe Leu Ser Ala Cys Ser Cys Tyr Val Gly Leu Ala Phe Gly Ile
 370 375 380

Leu Val Gly Asn Asn Phe Ala Pro Asn Ile Ile Phe Ala Leu Ala Gly
 385 390 395 400

Gly Met Phe Leu Tyr Ile Ser Leu Ala Asp Met Phe Pro Glu Met Asn
 405 410 415

Asp Met Leu Arg Glu Lys Val Thr Gly Arg Lys Thr Asp Phe Thr Phe
 420 425 430

Phe Met Ile Gln Asn Ala Gly Met Leu Thr Gly Phe Thr Ala Ile Leu
 435 440 445

Leu Ile Thr Leu Tyr Ala Gly Glu Ile Glu Leu Glu
 450 455 460

<210> 37
 <211> 1895
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (106)..(1725)

<400> 37
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 ataggagcca gaacctgagc ccctaagcca ttccctcac caatg atg ggg tcc cca 117
 Met Gly Ser Pro
 1
 gtg agt cat ctg ctg gcc ggc ttc tgt gtg tgg gtc gtc ttg ggc tgg 165
 Val Ser His Leu Leu Ala Gly Phe Cys Val Trp Val Val Leu Gly Trp
 5 10 15 20
 gta ggg ggc tca gtc ccc aac ctg ggc cct gct gag cag gag cag aac 213
 Val Gly Gly Ser Val Pro Asn Leu Gly Pro Ala Glu Gln Glu Gln Asn
 25 30 35
 cat tac ctg gcc cag ctg ttt ggc ctg tac ggc gag aat ggg acg ctg 261

His Tyr Leu Ala Gln Leu Phe Gly Leu Tyr Gly Glu Asn Gly Thr Leu	
40 45 50	
act gca ggg ggc ttg gcg cgg ctt ctc cac agc ctg ggg cta ggc cga	309
Thr Ala Gly Gly Leu Ala Arg Leu Leu His Ser Leu Gly Leu Gly Arg	
55 60 65	
gtt cag ggg ctt cgc ctg gga cag cat ggg cct ctg act gga cgg gct	357
Val Gln Gly Leu Arg Leu Gly Gln His Gly Pro Leu Thr Gly Arg Ala	
70 75 80	
gca tcc cca gct gca gac aat tcc aca cac agg cca cag aac cct gag	405
Ala Ser Pro Ala Ala Asp Asn Ser Thr His Arg Pro Gln Asn Pro Glu	
85 90 95 100	
ctg agt gtg gat gtc tgg gca ggg atg cct ctg ggt ccc tca ggg tgg	453
Leu Ser Val Asp Val Trp Ala Gly Met Pro Leu Gly Pro Ser Gly Trp	
105 110 115	
ggt gac ctg gaa gag tca aag gcc cct cac cta ccc cgt ggg cca gcc	501
Gly Asp Leu Glu Glu Ser Lys Ala Pro His Leu Pro Arg Gly Pro Ala	
120 125 130	
ccc tcg ggc ctg gac ctc ctt cac agg ctt ctg ttg ctg gac cac tca	549
Pro Ser Gly Leu Asp Leu Leu His Arg Leu Leu Leu Leu Asp His Ser	
135 140 145	
ttg gct gac cac ctg aat gag gat tgt ctg aac ggc tcc cag ctg ctg	597
Leu Ala Asp His Leu Asn Glu Asp Cys Leu Asn Gly Ser Gln Leu Leu	
150 155 160	
gtc aat ttt ggc ttg agc ccc gct gct cct ctg acc cct cgt cag ttt	645
Val Asn Phe Gly Leu Ser Pro Ala Ala Pro Leu Thr Pro Arg Gln Phe	
165 170 175 180	
gct ctg ctg tgc cca gcc ctg ctt tat cag atc gac agc cgc gtc tgc	693

Ala Leu Leu Cys Pro Ala Leu Leu Tyr Gln Ile Asp Ser Arg Val Cys	
185 190 195	
atc ggc gct ccg gcc cct gca ccc cca ggg gat cta cta tct gcc ctg	741
Ile Gly Ala Pro Ala Pro Ala Pro Pro Gly Asp Leu Leu Ser Ala Leu	
200 205 210	
ctt cag agt gcc ctg gca gtc ctg ttg ctc agc ctc cct tct ccc cta	789
Leu Gln Ser Ala Leu Ala Val Leu Leu Leu Ser Leu Pro Ser Pro Leu	
215 220 225	
tcc ctg ctg ctg ctg cgg ctc ctg gga cct cgt cta cta cgg ccc ttg	837
Ser Leu Leu Leu Leu Arg Leu Leu Gly Pro Arg Leu Leu Arg Pro Leu	
230 235 240	
ctg ggc ttc ctg ggg gcc ctg gcg gtg ggc act ctt tgt ggg gat gca	885
Leu Gly Phe Leu Gly Ala Leu Ala Val Gly Thr Leu Cys Gly Asp Ala	
245 250 255 260	
ctg cta cat ctg cta ccg cat gca caa gaa ggg cgg cac gca gga cct	933
Leu Leu His Leu Leu Pro His Ala Gln Glu Gly Arg His Ala Gly Pro	
265 270 275	
ggc gga cta cca gag aag gac ctg ggc ccg ggg ctg tca gtg ctc gga	981
Gly Gly Leu Pro Glu Lys Asp Leu Gly Pro Gly Leu Ser Val Leu Gly	
280 285 290	
ggc ctc ttc ctg ctc ttt gtg ctg gag aac atg ctg ggg ctt ttg cgg	1029
Gly Leu Phe Leu Leu Phe Val Leu Glu Asn Met Leu Gly Leu Leu Arg	
295 300 305	
cac cga ggg ctc agg cca aga tgc tgc agg cga aaa cga agg aat ctc	1077
His Arg Gly Leu Arg Pro Arg Cys Cys Arg Arg Lys Arg Arg Asn Leu	
310 315 320	
gaa aca cgc aac ttg gat ccg gag aat ggc agt ggg atg gcc ctt cag	1125

Pro Val Pro Leu Thr Pro Trp Val Phe Gly Val Thr Ala Gly Val Phe
 470 475 480

ctc tat gtg gcc ctt gtg gac atg cta cca gcc ctg ctt cgt cct ccg 1605
 Leu Tyr Val Ala Leu Val Asp Met Leu Pro Ala Leu Leu Arg Pro Pro
 485 490 495 500

gag ccc ctg cct acg ccc cat gtg ctc ctg cag ggg ctg ggg ctg ctg 1653
 Glu Pro Leu Pro Thr Pro His Val Leu Leu Gln Gly Leu Gly Leu Leu
 505 510 515

ctg ggg ggc ggc ctc atg ctt gcc ata acc ctg ctg gag gag cgg cta 1701
 Leu Gly Gly Gly Leu Met Leu Ala Ile Thr Leu Leu Glu Glu Arg Leu
 520 525 530

ctg ccc gtg acc act gag ggc tga tggggccagt ggaaaggggt cgggttgccc 1755
 Leu Pro Val Thr Thr Glu Gly
 535

ttccttcccc ccaaccacag gaatggaggc gggacacagg gccagtagga gcaataggat 1815

ttaataaac agaaccatc ccaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1875

aaaaaaaaa aaaaaaaaaa 1895

<210> 38

<211> 539

<212> PRT

<213> Homo sapiens

<400> 38

Met Gly Ser Pro Val Ser His Leu Leu Ala Gly Phe Cys Val Trp Val
 1 5 10 15

Val Leu Gly Trp Val Gly Gly Ser Val Pro Asn Leu Gly Pro Ala Glu
 20 25 30

Gln Glu Gln Asn His Tyr Leu Ala Gln Leu Phe Gly Leu Tyr Gly Glu
 35 40 45

Asn Gly Thr Leu Thr Ala Gly Gly Leu Ala Arg Leu Leu His Ser Leu
 50 55 60

Gly Leu Gly Arg Val Gln Gly Leu Arg Leu Gly Gln His Gly Pro Leu
 65 70 75 80

Thr Gly Arg Ala Ala Ser Pro Ala Ala Asp Asn Ser Thr His Arg Pro
 85 90 95

Gln Asn Pro Glu Leu Ser Val Asp Val Trp Ala Gly Met Pro Leu Gly
 100 105 110

Pro Ser Gly Trp Gly Asp Leu Glu Glu Ser Lys Ala Pro His Leu Pro
 115 120 125

Arg Gly Pro Ala Pro Ser Gly Leu Asp Leu Leu His Arg Leu Leu Leu
 130 135 140

Leu Asp His Ser Leu Ala Asp His Leu Asn Glu Asp Cys Leu Asn Gly
 145 150 155 160

Ser Gln Leu Leu Val Asn Phe Gly Leu Ser Pro Ala Ala Pro Leu Thr
165 170 175

Pro Arg Gln Phe Ala Leu Leu Cys Pro Ala Leu Leu Tyr Gln Ile Asp
180 185 190

Ser Arg Val Cys Ile Gly Ala Pro Ala Pro Ala Pro Pro Gly Asp Leu
195 200 205

Leu Ser Ala Leu Leu Gln Ser Ala Leu Ala Val Leu Leu Leu Ser Leu
210 215 220

Pro Ser Pro Leu Ser Leu Leu Leu Leu Arg Leu Leu Gly Pro Arg Leu
225 230 235 240

Leu Arg Pro Leu Leu Gly Phe Leu Gly Ala Leu Ala Val Gly Thr Leu
245 250 255

Cys Gly Asp Ala Leu Leu His Leu Leu Pro His Ala Gln Glu Gly Arg
260 265 270

His Ala Gly Pro Gly Gly Leu Pro Glu Lys Asp Leu Gly Pro Gly Leu
275 280 285

Ser Val Leu Gly Gly Leu Phe Leu Leu Phe Val Leu Glu Asn Met Leu
290 295 300

Gly Leu Leu Arg His Arg Gly Leu Arg Pro Arg Cys Cys Arg Arg Lys
 305 310 315 320

Arg Arg Asn Leu Glu Thr Arg Asn Leu Asp Pro Glu Asn Gly Ser Gly
 325 330 335

Met Ala Leu Gln Pro Leu Gln Ala Ala Pro Glu Pro Gly Ala Gln Gly
 340 345 350

Gln Arg Glu Lys Asn Ser Gln His Pro Pro Ala Leu Ala Pro Pro Gly
 355 360 365

His Gln Gly His Ser His Gly His Gln Gly Gly Thr Asp Ile Thr Trp
 370 375 380

Met Val Leu Leu Gly Asp Gly Leu His Asn Leu Thr Asp Gly Leu Ala
 385 390 395 400

Ile Gly Ala Ala Phe Ser Asp Gly Phe Ser Ser Gly Leu Ser Thr Thr
 405 410 415

Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala
 420 425 430

Met Leu Leu Gln Ser Gly Leu Ser Phe Arg Arg Leu Leu Leu Ser
 435 440 445

Leu Val Ser Gly Ala Leu Gly Leu Gly Gly Ala Val Leu Gly Val Gly
 450 455 460

Leu Ser Leu Gly Pro Val Pro Leu Thr Pro Trp Val Phe Gly Val Thr
 465 470 475 480

Ala Gly Val Phe Leu Tyr Val Ala Leu Val Asp Met Leu Pro Ala Leu
 485 490 495

Leu Arg Pro Pro Glu Pro Leu Pro Thr Pro His Val Leu Leu Gln Gly
 500 505 510

Leu Gly Leu Leu Leu Gly Gly Gly Leu Met Leu Ala Ile Thr Leu Leu
 515 520 525

Glu Glu Arg Leu Leu Pro Val Thr Thr Glu Gly
 530 535

<210> 39
 <211> 2636
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (222)..(2186)

<400> 39

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taactgtgaa atactctcca ggatttaaaa ggctgtggag ctccagataa agaatogttt	120
atctttcttc tgaagaaatt cctttggtaa caagtttacc ccataaacgg caacacactc	180
acctccatcc aagacagact caaggtggag gaagcgtgga a atg tgc ttc cgg aca	236
Met Cys Phe Arg Thr	
1 5	
aag ctc tca gta tcc tgg gtg cca ttg ttt ctt cta ctc agc cgt gtt	284
Lys Leu Ser Val Ser Trp Val Pro Leu Phe Leu Leu Leu Ser Arg Val	
10 15 20	
ttt tct act gag aca gac aaa ccc tca gcc cag gac agc aga agc cgt	332
Phe Ser Thr Glu Thr Asp Lys Pro Ser Ala Gln Asp Ser Arg Ser Arg	
25 30 35	
ggg agt tca ggc caa ccg gca gac ctg cta cag gtt ctc tct gct ggt	380
Gly Ser Ser Gly Gln Pro Ala Asp Leu Leu Gln Val Leu Ser Ala Gly	
40 45 50	
gac cac cca ccc cac aac cac tca aga agc ctc atc aaa aca ttg ttg	428
Asp His Pro Pro His Asn His Ser Arg Ser Leu Ile Lys Thr Leu Leu	
55 60 65	
gag aaa act ggg tgc cca cgg agg aga aac gga atg caa gga gat tgc	476
Glu Lys Thr Gly Cys Pro Arg Arg Arg Asn Gly Met Gln Gly Asp Cys	
70 75 80 85	
aat ctg tgc ttt gaa cca gat gca cta tta cta ata gct gga gga aat	524
Asn Leu Cys Phe Glu Pro Asp Ala Leu Leu Leu Ile Ala Gly Gly Asn	
90 95 100	
ttt gaa gat cag ctt aga gaa gaa gtg gtc cag aga gtt tct ctt ctc	572
Phe Glu Asp Gln Leu Arg Glu Glu Val Val Gln Arg Val Ser Leu Leu	

105	110	115	
ctt ctc tat tac att att cat cag gaa gag atc tgt tct tca aag ctc			620
Leu Leu Tyr Tyr Ile Ile His Gln Glu Glu Ile Cys Ser Ser Lys Leu			
120	125	130	
aac atg agt aat aaa gag tat aaa ttt tac cta cac agc cta ctg agc			668
Asn Met Ser Asn Lys Glu Tyr Lys Phe Tyr Leu His Ser Leu Leu Ser			
135	140	145	
ctc agg cag gat gaa gat tcc tct ttc ctt tca cag aat gag aca gaa			716
Leu Arg Gln Asp Glu Asp Ser Ser Phe Leu Ser Gln Asn Glu Thr Glu			
150	155	160	165
gat atc ttg gct ttc acc agg cag tac ttt gac act tct caa agc cag			764
Asp Ile Leu Ala Phe Thr Arg Gln Tyr Phe Asp Thr Ser Gln Ser Gln			
170	175	180	
tgt atg gaa acc aaa acg ctg cag aaa aaa tct gga ata gtg agc agt			812
Cys Met Glu Thr Lys Thr Leu Gln Lys Lys Ser Gly Ile Val Ser Ser			
185	190	195	
gaa ggt gct aat gaa agt acg ctt cct cag ttg gca gcc atg atc att			860
Glu Gly Ala Asn Glu Ser Thr Leu Pro Gln Leu Ala Ala Met Ile Ile			
200	205	210	
act ttg tcc ctc cag ggt gtt tgt ctg gga caa gga aac ttg cct tcc			908
Thr Leu Ser Leu Gln Gly Val Cys Leu Gly Gln Gly Asn Leu Pro Ser			
215	220	225	
cca gac tac ttt aca gaa tat att ttc agt tcc ttg aat cgt acg aat			956
Pro Asp Tyr Phe Thr Glu Tyr Ile Phe Ser Ser Leu Asn Arg Thr Asn			
230	235	240	245
acc ctc cgc cta tca gaa cta gac caa ctc ctc aac act ctc tgg acc			1004
Thr Leu Arg Leu Ser Glu Leu Asp Gln Leu Leu Asn Thr Leu Trp Thr			

250	255	260	
aga agt act tgt atc aaa aat gag aaa atc cat caa ttt caa agg aaa			1052
Arg Ser Thr Cys Ile Lys Asn Glu Lys Ile His Gln Phe Gln Arg Lys			
265	270	275	
caa aac aac ata ata acc cat gat cag ggc tat tct aat ttc tct tca			1100
Gln Asn Asn Ile Ile Thr His Asp Gln Gly Tyr Ser Asn Phe Ser Ser			
280	285	290	
tcc atg gaa aaa gag tct gag gat ggt cca gtt tcc tgg gat cag acc			1148
Ser Met Glu Lys Glu Ser Glu Asp Gly Pro Val Ser Trp Asp Gln Thr			
295	300	305	
tgc ttc tct gct agg cag ctg gtg gag ata ttt cta cag aag ggc ctc			1196
Cys Phe Ser Ala Arg Gln Leu Val Glu Ile Phe Leu Gln Lys Gly Leu			
310	315	320	325
tca ctc att tct aag gag gac ttt aag caa atg agt cca ggg atc atc			1244
Ser Leu Ile Ser Lys Glu Asp Phe Lys Gln Met Ser Pro Gly Ile Ile			
330	335	340	
cag cag ctc ctc agc tgc tcc tgc cac tta ccc aag gac caa caa gca			1292
Gln Gln Leu Leu Ser Cys Ser Cys His Leu Pro Lys Asp Gln Gln Ala			
345	350	355	
aag ctg cca cct acc act ctg gag aaa tac ggc tac agc acg gtg gct			1340
Lys Leu Pro Pro Thr Thr Leu Glu Lys Tyr Gly Tyr Ser Thr Val Ala			
360	365	370	
gtc acc ctt ctc aca ctg ggc tcc atg ctg ggg aca gcg ctg gtc ctt			1388
Val Thr Leu Leu Thr Leu Gly Ser Met Leu Gly Thr Ala Leu Val Leu			
375	380	385	
ttc cat agc tgt gag gag aac tac agg ctt atc tta cag ctg ttt gtg			1436
Phe His Ser Cys Glu Glu Asn Tyr Arg Leu Ile Leu Gln Leu Phe Val			

390	395	400	405	
ggc ttg gcc gtc ggg aca ctg tct ggg gac gct ctg ctc cac ctt atc				1484
Gly Leu Ala Val Gly Thr Leu Ser Gly Asp Ala Leu Leu His Leu Ile				
	410	415	420	
cct cag gtt ctt ggt tta cat aag cag gaa gcc cca gaa ttt ggg cat				1532
Pro Gln Val Leu Gly Leu His Lys Gln Glu Ala Pro Glu Phe Gly His				
	425	430	435	
ttc cat gaa agc aaa ggt cat att tgg aaa ctg atg gga tta att gga				1580
Phe His Glu Ser Lys Gly His Ile Trp Lys Leu Met Gly Leu Ile Gly				
	440	445	450	
ggc atc cat gga ttt ttc ttg ata gaa aaa tgt ttt att ctt ctt gta				1628
Gly Ile His Gly Phe Phe Leu Ile Glu Lys Cys Phe Ile Leu Leu Val				
	455	460	465	
tca cca aat gac aag aaa agc cca gaa gat tca cag gca gct gaa atg				1676
Ser Pro Asn Asp Lys Lys Ser Pro Glu Asp Ser Gln Ala Ala Glu Met				
470	475	480	485	
cct ata ggc agt atg aca gcc tcc aac aga aaa tgt aaa gcc att agc				1724
Pro Ile Gly Ser Met Thr Ala Ser Asn Arg Lys Cys Lys Ala Ile Ser				
	490	495	500	
ttg tta gca atc atg att ctg gtt ggg gac agc ctg cat aat ttt gca				1772
Leu Leu Ala Ile Met Ile Leu Val Gly Asp Ser Leu His Asn Phe Ala				
	505	510	515	
gat ggc cta gcc ata gga gca gcc ttc tca tca tca tcc gag tca gga				1820
Asp Gly Leu Ala Ile Gly Ala Ala Phe Ser Ser Ser Ser Glu Ser Gly				
	520	525	530	
gtg acc act acg att gct atc ttg tgt cat gaa atc cca cat gaa atg				1868
Val Thr Thr Thr Ile Ala Ile Leu Cys His Glu Ile Pro His Glu Met				

535	540	545	
gga gac ttt gcc gtg ctc tta agc tct gga ctt tct atg aag act gcc			1916
Gly Asp Phe Ala Val Leu Leu Ser Ser Gly Leu Ser Met Lys Thr Ala			
550	555	560	565
atc ctg atg aat ttt ata agc tcc cta act gcc ttc atg gga tta tac			1964
Ile Leu Met Asn Phe Ile Ser Ser Leu Thr Ala Phe Met Gly Leu Tyr			
	570	575	580
att ggc ctt tcc gtg tca gct gat cca tgt gtt caa gac tgg atc ttc			2012
Ile Gly Leu Ser Val Ser Ala Asp Pro Cys Val Gln Asp Trp Ile Phe			
	585	590	595
aca gtc act gct ggg atg ttc tta tat tta tcc ttg gtt gaa atg ctt			2060
Thr Val Thr Ala Gly Met Phe Leu Tyr Leu Ser Leu Val Glu Met Leu			
	600	605	610
cct gaa atg act cat gtt caa aca caa cga ccc tgg atg atg ttt ctc			2108
Pro Glu Met Thr His Val Gln Thr Gln Arg Pro Trp Met Met Phe Leu			
	615	620	625
ctg caa aac ttt gga ttg atc cta ggt tgg ctt tct ctc ctg ctc ttg			2156
Leu Gln Asn Phe Gly Leu Ile Leu Gly Trp Leu Ser Leu Leu Leu Leu			
630	635	640	645
gct ata tat gag caa aat att aaa ata taa gtgaggatct tcaacatctt			2206
Ala Ile Tyr Glu Gln Asn Ile Lys Ile			
	650		
tcaaaaatgc atttatatag tcttactttg tttctttcat tgcactctat aatgattttt			2266
aaattaagaa ttttttatct taggcaaagt gtgtctcttt caattcatta acttattaat			2326
tttataatgc agttttattt ttggaaacat ataaatatca gactgtcctt aattgaaatt			2386

ttgtctttgg ttccaacac catgatgaag ctcttgcttt ttaaaaagta gttagtaa 2446
 tctgcatgaa ttttagtaaa ctttaaaaaa tagatTTTTT ccctaagaaa gaatgtttgt 2506
 agaatttaaa gtggacagat gcctgttggg gtaaaatcaa ctgcaacttt ttgatgttaa 2566
 tttttttccc tgtgcaatta taaactataa gcaagttaag tgacaagcaa atgtaataaa 2626
 gactagtttt 2636

<210> 40
 <211> 654
 <212> PRT
 <213> Homo sapiens

<400> 40

Met Cys Phe Arg Thr Lys Leu Ser Val Ser Trp Val Pro Leu Phe Leu
 1 5 10 15

Leu Leu Ser Arg Val Phe Ser Thr Glu Thr Asp Lys Pro Ser Ala Gln
 20 25 30

Asp Ser Arg Ser Arg Gly Ser Ser Gly Gln Pro Ala Asp Leu Leu Gln
 35 40 45

Val Leu Ser Ala Gly Asp His Pro Pro His Asn His Ser Arg Ser Leu
 50 55 60

Ile Lys Thr Leu Leu Glu Lys Thr Gly Cys Pro Arg Arg Arg Asn Gly
 65 70 75 80

Ile Ala Gly Gly Asn Phe Glu Asp Gln Leu Arg Glu Glu Val Val Gln
100 105 110

Cys Ser Ser Lys Leu Asn Met Ser Asn Lys Glu Tyr Lys Phe Tyr Leu
130 135 140

His Ser Leu Leu Ser Leu Arg Gln Asp Glu Asp Ser Ser Phe Leu Ser
145 150 155 160

Gln Asn Glu Thr Glu Asp Ile Leu Ala Phe Thr Arg Gln Tyr Phe Asp
165 170 175

Thr Ser Gln Ser Gln Cys Met Glu Thr Lys Thr Leu Gln Lys Lys Ser
180 185 190

Gly Ile Val Ser Ser Glu Gly Ala Asn Glu Ser Thr Leu Pro Gln Leu
195 200 205

Ala Ala Met Ile Ile Thr Leu Ser Leu Gln Gly Val Cys Leu Gly Gln
210 215 220

Gly Asn Leu Pro Ser Pro Asp Tyr Phe Thr Glu Tyr Ile Phe Ser Ser
 225 230 235 240

Leu Asn Arg Thr Asn Thr Leu Arg Leu Ser Glu Leu Asp Gln Leu Leu
 245 250 255

Asn Thr Leu Trp Thr Arg Ser Thr Cys Ile Lys Asn Glu Lys Ile His
 260 265 270

Gln Phe Gln Arg Lys Gln Asn Asn Ile Ile Thr His Asp Gln Gly Tyr
 275 280 285

Ser Asn Phe Ser Ser Ser Met Glu Lys Glu Ser Glu Asp Gly Pro Val
 290 295 300

Ser Trp Asp Gln Thr Cys Phe Ser Ala Arg Gln Leu Val Glu Ile Phe
 305 310 315 320

Leu Gln Lys Gly Leu Ser Leu Ile Ser Lys Glu Asp Phe Lys Gln Met
 325 330 335

Ser Pro Gly Ile Ile Gln Gln Leu Leu Ser Cys Ser Cys His Leu Pro
 340 345 350

Lys Asp Gln Gln Ala Lys Leu Pro Pro Thr Thr Leu Glu Lys Tyr Gly
 355 360 365

Tyr Ser Thr Val Ala Val Thr Leu Leu Thr Leu Gly Ser Met Leu Gly
370 375 380

Thr Ala Leu Val Leu Phe His Ser Cys Glu Glu Asn Tyr Arg Leu Ile
385 390 395 400

Leu Gln Leu Phe Val Gly Leu Ala Val Gly Thr Leu Ser Gly Asp Ala
405 410 415

Leu Leu His Leu Ile Pro Gln Val Leu Gly Leu His Lys Gln Glu Ala
420 425 430

Pro Glu Phe Gly His Phe His Glu Ser Lys Gly His Ile Trp Lys Leu
435 440 445

Met Gly Leu Ile Gly Gly Ile His Gly Phe Phe Leu Ile Glu Lys Cys
450 455 460

Phe Ile Leu Leu Val Ser Pro Asn Asp Lys Lys Ser Pro Glu Asp Ser
465 470 475 480

Gln Ala Ala Glu Met Pro Ile Gly Ser Met Thr Ala Ser Asn Arg Lys
485 490 495

Cys Lys Ala Ile Ser Leu Leu Ala Ile Met Ile Leu Val Gly Asp Ser
500 505 510

Leu His Asn Phe Ala Asp Gly Leu Ala Ile Gly Ala Ala Phe Ser Ser
515 520 525

Ser Ser Glu Ser Gly Val Thr Thr Thr Ile Ala Ile Leu Cys His Glu
530 535 540

Ile Pro His Glu Met Gly Asp Phe Ala Val Leu Leu Ser Ser Gly Leu
545 550 555 560

Ser Met Lys Thr Ala Ile Leu Met Asn Phe Ile Ser Ser Leu Thr Ala
565 570 575

Phe Met Gly Leu Tyr Ile Gly Leu Ser Val Ser Ala Asp Pro Cys Val
580 585 590

Gln Asp Trp Ile Phe Thr Val Thr Ala Gly Met Phe Leu Tyr Leu Ser
595 600 605

Leu Val Glu Met Leu Pro Glu Met Thr His Val Gln Thr Gln Arg Pro
610 615 620

Trp Met Met Phe Leu Leu Gln Asn Phe Gly Leu Ile Leu Gly Trp Leu
625 630 635 640

Ser Leu Leu Leu Leu Ala Ile Tyr Glu Gln Asn Ile Lys Ile
645 650

<210> 41
 <211> 2309
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (43).. (1158)

<400> 41

gggccgcccg gatcgccgcc gccgccgccg cacgtacgtg gc atg cct gga tgt 54
 Met Pro Gly Cys
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ccc tgc cct ggc tgt ggc atg gcg ggc cca agg ctc ctc ttc ctc act 102
 Pro Cys Pro Gly Cys Gly Met Ala Gly Pro Arg Leu Leu Phe Leu Thr
 5 10 15 20

gcc ctt gcc ctg gag ctc ttg gga agg gct ggg ggt tcc cag ccg gcc 150
 Ala Leu Ala Leu Glu Leu Leu Gly Arg Ala Gly Gly Ser Gln Pro Ala
 25 30 35

ctc cgg agc cgg ggg act gcg acg gcc tgt cgc ctg gac aac aag gaa 198
 Leu Arg Ser Arg Gly Thr Ala Thr Ala Cys Arg Leu Asp Asn Lys Glu
 40 45 50

agc gag tcc tgg ggg gct ctg ctg agc gga gag cgg ctg gac acc tgg 246
 Ser Glu Ser Trp Gly Ala Leu Leu Ser Gly Glu Arg Leu Asp Thr Trp
 55 60 65

atc tgc tcc ctc ctg ggt tcc ctc atg gtg ggg ctc agt ggg gtc ttc 294
 Ile Cys Ser Leu Leu Gly Ser Leu Met Val Gly Leu Ser Gly Val Phe
 70 75 80

342

390

438

486

534

582

630

678

726

aac ttc acc cac ggg ctg gct gtg gct gcc agc ttc ctt gtg agc aag	774
Asn Phe Thr His Gly Leu Ala Val Ala Ala Ser Phe Leu Val Ser Lys	
230 235 240	
aag atc ggg ctc ctg aca acc atg gcc atc ctc ctg cat gag atc ccc	822
Lys Ile Gly Leu Leu Thr Thr Met Ala Ile Leu Leu His Glu Ile Pro	
245 250 255 260	
cat gag gtg ggc gac ttt gcc atc ctg ctc cgg gcc ggc ttt gac cga	870
His Glu Val Gly Asp Phe Ala Ile Leu Leu Arg Ala Gly Phe Asp Arg	
265 270 275	
tgg agc gca gcc aag ctg caa ctc tca aca gcg ctg ggg ggc cta ctg	918
Trp Ser Ala Ala Lys Leu Gln Leu Ser Thr Ala Leu Gly Gly Leu Leu	
280 285 290	
ggc gct ggc ttc gcc atc tgt acc cag tcc ccc aag gga gta gtt ggg	966
Gly Ala Gly Phe Ala Ile Cys Thr Gln Ser Pro Lys Gly Val Val Gly	
295 300 305	
tgt tct ccc gct gca gag gag acg gca gcc tgg gtc ctg ccc ttc acc	1014
Cys Ser Pro Ala Ala Glu Glu Thr Ala Ala Trp Val Leu Pro Phe Thr	
310 315 320	
tct ggc ggc ttt ctc tac atc gcc ttg gtg aac gtg ctc cct gac ctc	1062
Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val Asn Val Leu Pro Asp Leu	
325 330 335 340	
ttg gaa gaa gag gac cgg tgg cgc tcc ctg cag cag ctg ctt ctg ctc	1110
Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu Gln Gln Leu Leu Leu Leu	
345 350 355	
tgt gcg ggc atc gtg gta atg gtg ctg ttc tcg ctc ttc gtg gat taa	1158
Cys Ala Gly Ile Val Val Met Val Leu Phe Ser Leu Phe Val Asp	
360 365 370	

ctttcctga tgccgacgcc cctgccccct gcagcaataa gatgctcgga ttactctgt 1218
 gaccgcatat gtgagaggca gagaggcgga gtggctgoga gagagaatga gcctcccgcc 1278
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 aatgtgctcc ggcagagtgc tgaagccata atcccaacc atttcccttg gctgacgccc 2118
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gtatctgtaa atattgttc tatagataag atacaaataa atattatcca cataaaaaaa 2298

aaaaaaaaa a 2309

<210> 42

<211> 371

<212> PRT

<213> Homo sapiens

<400> 42

Met Pro Gly Cys Pro Cys Pro Gly Cys Gly Met Ala Gly Pro Arg Leu
1 5 10 15

Leu Phe Leu Thr Ala Leu Ala Leu Glu Leu Leu Gly Arg Ala Gly Gly
20 25 30

Ser Gln Pro Ala Leu Arg Ser Arg Gly Thr Ala Thr Ala Cys Arg Leu
35 40 45

Asp Asn Lys Glu Ser Glu Ser Trp Gly Ala Leu Leu Ser Gly Glu Arg
50 55 60

Leu Asp Thr Trp Ile Cys Ser Leu Leu Gly Ser Leu Met Val Gly Leu
65 70 75 80

Ser Gly Val Phe Pro Leu Leu Val Ile Pro Leu Glu Met Gly Thr Met
85 90 95

Leu Arg Ser Glu Ala Gly Ala Trp Arg Leu Lys Gln Leu Leu Ser Phe
100 105 110

Ala Leu Gly Gly Leu Leu Gly Asn Val Phe Leu His Leu Leu Pro Glu
115 120 125

Ala Trp Ala Tyr Thr Cys Ser Ala Ser Pro Gly Gly Glu Gly Gln Ser
130 135 140

Leu Gln Gln Gln Gln Gln Leu Gly Leu Trp Val Ile Ala Gly Ile Leu
145 150 155 160

Thr Phe Leu Ala Leu Glu Lys Met Phe Leu Asp Ser Lys Glu Glu Gly
165 170 175

Thr Ser Gln Ala Pro Asn Lys Asp Pro Thr Ala Ala Ala Ala Ala Leu
180 185 190

Asn Gly Gly His Cys Leu Ala Gln Pro Ala Ala Glu Pro Gly Leu Gly
195 200 205

Ala Val Val Arg Ser Ile Lys Val Ser Gly Tyr Leu Asn Leu Leu Ala
210 215 220

Asn Thr Ile Asp Asn Phe Thr His Gly Leu Ala Val Ala Ala Ser Phe
225 230 235 240

Leu Val Ser Lys Lys Ile Gly Leu Leu Thr Thr Met Ala Ile Leu Leu
245 250 255

His Glu Ile Pro His Glu Val Gly Asp Phe Ala Ile Leu Leu Arg Ala
260 265 270

Gly Phe Asp Arg Trp Ser Ala Ala Lys Leu Gln Leu Ser Thr Ala Leu
275 280 285

Gly Gly Leu Leu Gly Ala Gly Phe Ala Ile Cys Thr Gln Ser Pro Lys
290 295 300

Gly Val Val Gly Cys Ser Pro Ala Ala Glu Glu Thr Ala Ala Trp Val
305 310 315 320

Leu Pro Phe Thr Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val Asn Val
325 330 335

Leu Pro Asp Leu Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu Gln Gln
340 345 350

Leu Leu Leu Leu Cys Ala Gly Ile Val Val Met Val Leu Phe Ser Leu
355 360 365

Phe Val Asp
370

<210> 43

<211> 19

<212> DNA

<213> Artificial

<220>

<223> A target sequence for siRNA

<400> 43

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19